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Bloomberg Businessweek

I Wish I Could Quit You

Will stocks and oil prices go their separate ways?
p6

Bloomberg Businessweek

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PHOTOGRAPH BY THOMAS PRIOR FOR BLOOMBERG BUSINESSWEEK

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COVER AND COVER TRAIL: PHOTOGRAPH BY FINLAY MACKAY FOR BLOOMBERG BUSINESSWEEK

Cover Trail

How the cover gets made

1
"The cover story is on the correlation between the stock market and oil prices, which can be bad in terms of an economic recovery."

"Why's it bad?"

"Because when oil prices go down, so does the market."

"We could run a fever-line chart with two lines. Both lines could be going downward. And then a caption could say, 'Look, they're correlated—wow!'"

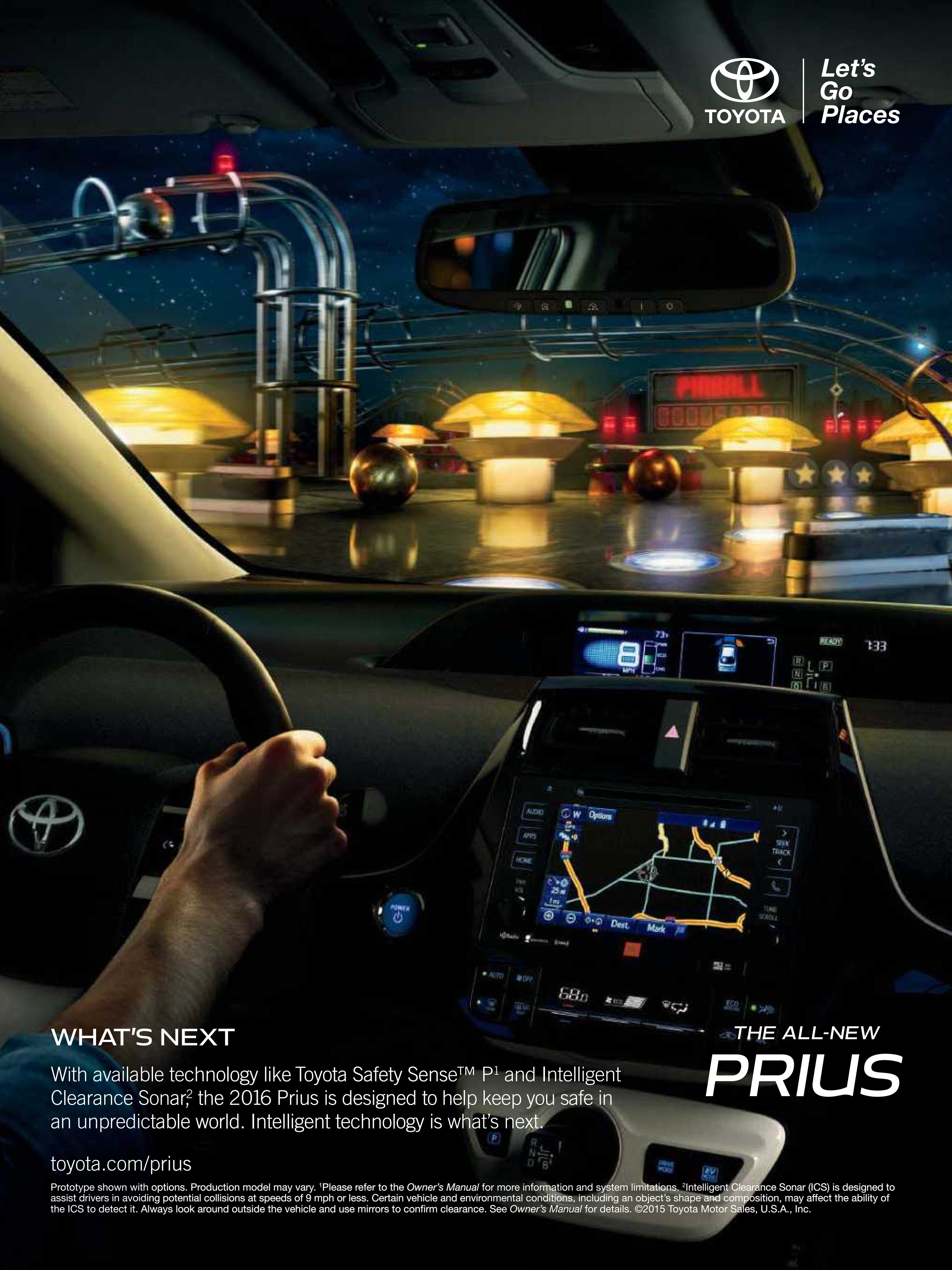
"That doesn't sound very sexy."

2
"A businessman, representing the stock market, and an oil drum, which represents—stay with me—oil prices, in some kind of human-on-inanimate-object codependent romantic relationship."

"That's very strange. It also completely diminishes the complexity of the story. But it's sexier."

"One out of three. Sounds like a win!"

3


TOYOTA
Let's Go Places
PINBALL
WHAT'S NEXT
With available technology like Toyota Safety Sense™ P¹ and Intelligent Clearance Sonar,² the 2016 Prius is designed to help keep you safe in an unpredictable world. Intelligent technology is what's next.
toyota.com/prius
THE ALL-NEW
PRIUS
Prototype shown with options. Production model may vary. ¹Please refer to the *Owner's Manual* for more information and system limitations. ²Intelligent Clearance Sonar (ICS) is designed to assist drivers in avoiding potential collisions at speeds of 9 mph or less. Certain vehicle and environmental conditions, including an object's shape and composition, may affect the ability of the ICS to detect it. Always look around outside the vehicle and use mirrors to confirm clearance. See *Owner's Manual* for details. ©2015 Toyota Motor Sales, U.S.A., Inc.

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Corrections & Clarifications

"The Secret Ingredient in a $12 Brownie" (Focus on Small Business, Feb. 8-Feb. 14, 2016) should have said that Peggy Noonan was convicted of a misdemeanor, not a felony, and that she was granted probation.

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A WORLD ABOVE

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Oil and Stocks Take the Plunge

By Peter Coy and Matthew Philips

Wherever crude goes, equities go. What will it take to restore some rationality to the market?

It's scary out there. The rout in the stock market that began around Jan. 1 took a turn for the worse early this month. By Feb. 10 the Standard & Poor's 500-stock index was down 9 percent for the year. That's its worst start since the recession year of 2008. Falling oil prices were blamed: A meeting between Saudis and Venezuelans aimed at curbing production had ended inconclusively. West Texas Intermediate fell again below $28 a barrel—more than 70 percent off its 2014 high. Trigger-happy investors have gotten accustomed to selling stocks whenever oil dips. With oil in serious oversupply, it's hard to sustain any kind of recovery on Wall Street. "The toughest problem for people to deal with is oil getting linked with the market," says Tobias Levkovich, Citigroup's chief U.S. equity strategist.

Just in time for Valentine's Day, it appears that oil and stocks have developed an unhealthy, codependent relationship. They're way too deep into each other. Where one market goes, the other follows. If they were people, a counselor would be urging a trial separation. "This is highly unusual," Torsten Slok, chief international economist at Deutsche Bank, wrote to clients in late January. "Call it the oil correlation conundrum."

Or oilmageddon, as Citigroup economists have named it. Before you join the Cassandras, though, here are a few things to consider: First, cheap oil isn't the boogeyman you'd think it is from reading the headlines. Upward spikes in energy prices cause recessions; dips don't. The national average price of gasoline is down $1.01 from last summer. The money people save is fueling purchases of things like takeout food. "If you're driving to work every day and you save $10 at the gas pump, you stop at Starbucks or whatever and spend part of that savings," says Michael Montgomery, an economist with IHS Global Insight.

True, Americans are banking most of their savings right now. But that's good in the long run, too. Americans' debt payments, rent, leases, and other obligations are close to their lowest share of income since the Federal Reserve began tracking the ratio in 1980. Since consumers account for the lion's share of the U.S. economy, anything that improves their financial situation makes it more resilient.

Second, the notion that cheap oil signals recession—the idea being that the price decline indicates declining global demand—is contradicted by the evidence. Far from falling, world oil consumption rose by 3.1 million barrels a day in the two years through the third quarter of 2015, according to the International Energy Agency. It's just that the supply grew even faster, by 5 million barrels a day. "With the market already awash in oil, it is very hard to see how oil prices can rise significantly in the short term," the agency said on Feb. 8. Prices might even go lower temporarily before rebounding. "I wouldn't be surprised if this market goes into the teens," Jeff Currie, Goldman Sachs's head of commodities research, told Bloomberg TV on Feb. 8.

Third—and now we're laying out the other side of the argument—all this doesn't mean Wall Street is entirely irrational to tremble when crude tumbles. The market turmoil is shaking up companies as far afield as St. Louis-based Emerson Electric, headed since 2000 by Chief Executive Officer David Farr. Emerson makes products ranging from oil-production instruments to closet organizers. "The last 30 days have been what I would call the most unusual in my time at Emerson. I've never seen a marketplace go so volatile," Farr told analysts on Feb. 2.

ExxonMobil is facing a potential credit downgrade for the first time since the Great Depression. ConocoPhillips is cutting its dividend for the first time in a quarter-century. Energy stocks account for 6.6 percent of the S&P 500's market value. While that's only half their share of five years ago, it's still big enough for them to drag down the overall index on bad days.

In 2014 the energy industry accounted for nearly one-third of S&P 500 companies' capital expenditures, according to data compiled by Bloomberg. At least $1 trillion in spending is getting canceled, says Steven Kopits, president of Princeton Energy Advisors. When energy companies cut back, pipe makers, truckers, railroads, and businesses in other industries suffer.

Then there's the financial sector. Oil drillers borrowed heavily to expand production, and many can't make money at today's superlow prices. As much as 15 percent of the face value of high-yield bonds owed by U.S. oil producers and service companies could go into default

In Sync

Correlation of daily changes in S&P 500-stock index and West Texas Intermediate crude

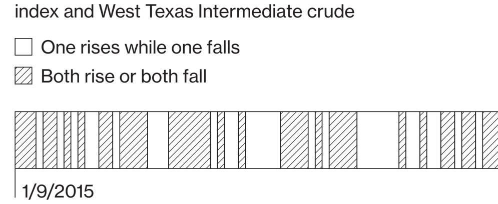


PHOTO ILLUSTRATION BY 731; PHOTO: JOHN BANAGAN/GETTY IMAGES; DATA: BLOOMBERG

this year, according to BCA Research. “The major risk banks have isn’t to their normal retail-oriented stuff, it’s to the oil space,” says Andrew Brenner, head of international fixed income at National Alliance Capital Markets in New York. Markets were rattled on Feb. 8 after the Debtwire news service reported that Chesapeake Energy, the No. 2 U.S. natural gas producer, had hired a law firm to restructure a $9.8 billion debt load. The company issued a statement saying it has no plans to pursue bankruptcy.

Trouble could radiate outward if banks, their balance sheets weakened by defaults in the oil industry, cut back lending to other enterprises. Says Nicholas Sargen, chief economist at Fort Washington Investment Advisors: “There are some people beginning to worry that this thing could spread like the subprime crisis. People said then that it was too small to matter, and then you find out there are linkages you didn’t know about.”

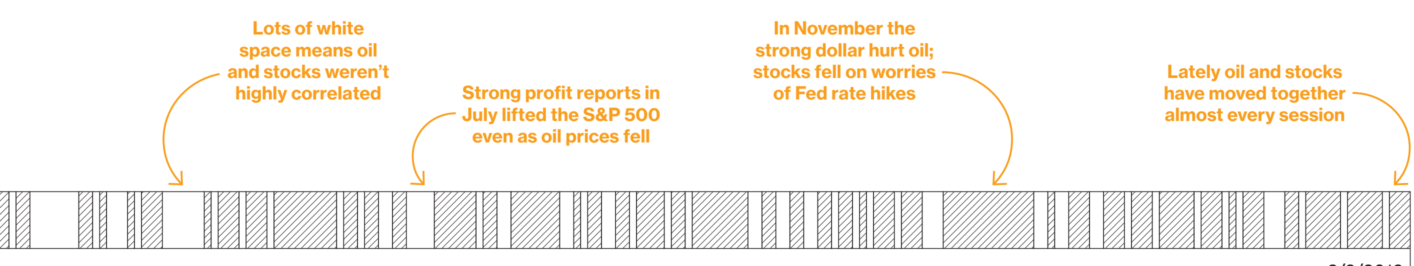
How long will oil and stocks continue their doomed embrace? No one knows for sure, but there are signs that emotion has gotten the better of investors. Once things calm down, the underlying strengths of the U.S. economy could start to become clearer. At that point, stocks could start to rebound even if—or because!—the global glut of crude keeps oil prices low.

History is a useful guide. So far this year, the S&P 500 is moving in closer tandem with West Texas Intermediate, the benchmark U.S. crude oil, than in any year since 2000 except for 2010. The reasons for the high correlation in 2010 were similar: abundant oil supplies and fears about global growth. Interestingly, around the second week of February 2010, the mood turned. The correlation continued, but with oil and stocks both rising instead of falling.

Stocks and oil tend to move up together in times of optimism about demand and fall together in times of pessimism about demand, according to a 2008 analysis by Andrea Pescatori, a Federal Reserve Bank of Cleveland economist who’s now at the International Monetary Fund. If that’s so, the current high correlation is as much a barometer of sentiment about the outlook for global growth as it is an indication of what’s happening in the real world. “Right now, anything that’s partly valued on the outlook for growth is going to go down. You have a growth scare,” says Russ Koesterich, global chief investment strategist at BlackRock.

Lightning-fast financial markets don’t reward subtle thinking. Traders prefer to simplify the world to a stark daily decision: risk on or risk off. If it’s a risk-on day, people scoop up high-yield debt, stocks in emerging markets, and industrial commodities, including oil—any asset that’s volatile but does well in periods of growth. On risk-off days, they retreat to ultrasafe but low-yielding investments such as U.S. Treasury securities.

There have been a lot of risk-off days lately. That explains why the 10-year Treasury note’s yield, which declines when its price rises, fell below 1.7 percent on Feb. 10, from almost 2.5 percent last ▶



◀ June. It also helps explain why both oil (risky) and the S&P 500 (kind of risky) have been heavily sold off. "If you have a multiasset portfolio and you're looking to de-risk, and you have problems in one sector, you'll attempt to sell others to get your overall risk profile lower," says Krishna Memani, chief investment officer at Oppenheimer Funds in New York.

Synchronized plunges this extreme in stocks and oil usually indicate that investors are expecting a U.S. recession, which would kill corporate profits and demand for crude. But how likely is a recession over the next year or so? Not impossible, but not probable.

The most important indicator of economic health is employment. The U.S. created 151,000 jobs in January, less than in previous months but more than enough to absorb the normal flow of entrants into the labor force. The unemployment rate dropped to 4.9 percent, which the Federal Reserve considers full employment. Average hourly earnings rose 2.5 percent from the year before. That's a real pay raise for American workers, since it's above the inflation rate, yet it's not so high as to get the Fed worried about an incipient wage-price inflationary spiral. Meanwhile, companies show no sign of retrenching on employment: In December listed job openings were the highest as a share of all jobs, filled and unfilled, since record keeping began in 2000, according to data released by the Bureau of Labor Statistics on Feb. 9.

Cheap oil, supposedly an economic threat, has done one good thing for the U.S. economy and stocks. It's kept the overall increase in consumer prices through December to just 0.7 percent. That could help persuade the Fed to throttle back its plans to raise rates. On Feb. 10, Fed Chair Janet Yellen suggested that further rate hikes would depend on whether the market turmoil persists. "Monetary policy is by no means on a preset course," she told Congress. Low rates are good for both the economy and Wall Street, because stocks become a more enticing alternative when rates are low.

The bears are right that cheap oil is damaging high-cost producers around the world, and some of those are in the U.S. Amazingly, though, some shale producers in America can make money even with prices as low as they are. According to an analysis by Bloomberg Intelligence, producers in the Eagle Ford basin in DeWitt County, Texas, could break even with West Texas Intermediate as cheap as $22.52 a barrel. The countries really being slammed by cheap oil are not the U.S. but the likes of Russia and Venezuela, which have a fatal combination of heavy dependence on oil exports and high production costs. U.S. dependence on those countries as export markets is trivial, as are American bank loans to them. American banks are more exposed to U.S. shale producers, of course. But BCA Research predicts that only 5 percent to 10 percent of bank loans to that sector will go into default this year—and most of those will eventually get repaid as the companies emerge from restructuring.

Yes, declines in corporate earnings tend to presage recessions, and S&P 500 operating earnings have been falling in recent quarters from year-ago levels. But take out energy stocks and they've still been rising. Historically, stocks and the economy brush off weak oil earnings: Bruce Kasman, chief economist at JPMorgan Chase, notes that the only years in the recent past when S&P 500 profits fell while the economy held up were 1986 and 1998—which were years when oil prices tumbled, as they're doing now. Goldman Sachs economists recently put the chance of a U.S. recession at 18 percent within one year and 23 percent within two.

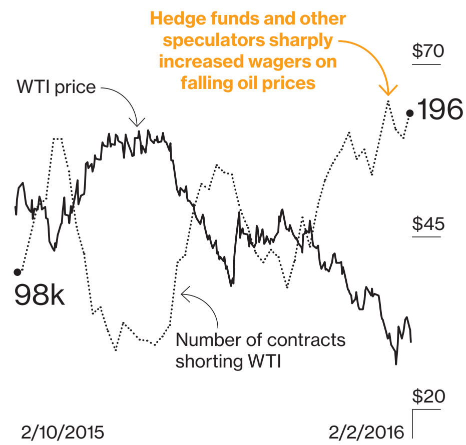
The sense that falling oil is bad for stocks is mostly a matter of timing and conspicuousness. The bad parts of the oil plunge are hitting now: the credit downgrades, the defaults, the investment cutbacks, the layoffs of roughnecks. They're making news and rattling people's confidence. "We've taken the big hit upfront," says Chris Varvares, co-founder of St. Louis-based Macroeconomic Advisers. Eventually, the money freed up by cheap oil will leak into other parts of the economy. When oil prices crashed in 1986 and gasoline suddenly got cheap, it didn't show up in the consumption numbers for more than a year, says David Rosenberg, chief economist at Gluskin Sheff.

In any case, oil prices this low aren't likely to last long. The market for crude is driven increasingly by high-frequency,

Goldman Sachs puts the chance of recession in the next year at 18 percent

A Big Bet on Cheaper Oil

Accumulated short positions in West Texas Intermediate crude



DATA COMPILED BY BLOOMBERG

computer-based momentum trading. In July, the CME Group—formerly the Chicago Mercantile Exchange—ended the 167-year history of actual humans trading commodity futures in open pits in Chicago and New York. Computer trading has proved more efficient, but not always better. "There was a governing quality of human input that's been lost in the market, that sort of prevented this kind of lunacy," says Dan Dicker, a former oil trader on the Nymex and president of MercBloc, a wealth-management firm. "People could only move but so fast."

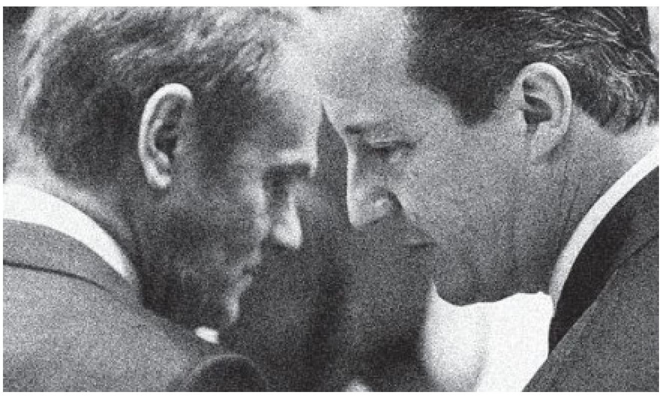
At the moment, says Kopits of Princeton Energy Advisors, "there's a weird disconnect between any kind of long-term fundamentals and current market values." Fundamentals tend to win out in the long run. Supply will be curbed as drillers drop projects that are unprofitable at $30 a barrel. And demand will accelerate; people are already driving more miles, albeit in more fuel-efficient vehicles. (A 2015 Ford F-150 pickup gets 30 percent better gas mileage on the highway than the 2005 model.) Oil traders spent most of 2015 increasing their bets that oil prices would fall. Since mid-January they have slightly pared their short positions and bought more contracts that gain value when oil rises.

Barry White began *Can't Get Enough of Your Love, Babe* by saying, "I've heard people say that too much of anything is not good for you, baby." Cheap oil is kind of like that for the stock market. But with any luck, their dysfunctional dynamic won't last much longer. Ⓑ —*With Dani Burger and Oliver Renick*

To read Mark Gilbert on the upside of cash and Megan McArdle on anti-Hillary Clinton politics, go to
Bloombergview.com

Help Cameron Keep The U.K. in the EU

The British prime minister's proposed referendum has limited his options



First things first: Britain needs Europe, and Europe needs Britain. U.K. Prime Minister David Cameron and European Council President Donald Tusk agree on this point, but they need to be more emphatic about it.

A referendum on the matter could happen as soon as June, and opinion in the country is closely divided. Cameron has followed a risky strategy of promising voters he'll force reform on the European Union as a condition of Britain's continued membership.

On Feb. 2, Tusk gave Cameron a proposed set of changes to the union's rules. The plan, which Cameron has welcomed, will be up for debate at an EU summit on Feb. 18. It provides measures to shield non-euro EU countries from euro zone policy, would put U.K. financial regulation more firmly under U.K. control, and includes new thinking on sovereignty and migrants.

These ideas are worthwhile but far from radical. They won't satisfy the euroskeptics in Cameron's own party. At the same time, they're unlikely to sail through unopposed by other EU leaders. This puts the prime minister in a tight spot: The summit may present him with a diminished version of a plan that's just been mocked as worthless by much of the U.K. press.

Cameron set himself up for failure by promising fundamental reform on such a tight schedule. Nonetheless, Tusk's proposals aren't worthless. Valuable in their own right, they also offer hope that the EU is capable of further reform.

The plan is a basis for compromise. What must happen to put that into effect? Britain's hard-line euroskeptics won't ever be assuaged, but those who think that Britain is better off in Europe, whatever their opinion of Cameron and his party, need to rally in support of his effort to close and sell the deal. There'll be plenty of time for Cameron-bashing later. In the same way, Europe's other leaders need to quell any desire they may have to punish Cameron's assertiveness by embarrassing him at the summit.

The main sticking point for both sides is migration within the EU. Other leaders have been reluctant to budge on this: Restrictions on the free movement of EU citizens clash with a core principle of the union. Yet anti-immigrant sentiment is running high in Britain, as elsewhere in the union, and shouldn't be flatly ignored. Tusk proposes allowing temporary restrictions on migrants' ability to claim government subsidies—less than Cameron led voters to expect, but good enough.

Giving ground there, Cameron should ask for more on the issue of sovereignty—and it would serve the interests of the other EU countries to go along. Tusk's proposal says the union's commitment to "ever closer union" is about promoting "trust and understanding among peoples living in open and democratic societies" and not a commitment to political integration. EU leaders should affirm and formalize this understanding.

A Modest Energy Bill Is Better Than None

House Republicans and Senate Democrats are impeding much-needed legislation

It seems every elected official in Washington has found a different shortcoming in the energy bill before the Senate, which would be the first overhaul of energy policy since 2007. There's a term for this kind of imperfection: It's called legislation.

In fairness, members of Congress may have forgotten what actual legislating is like; there's been so little of it in recent years. And this bill is hardly the kind of comprehensive reform the U.S. needs. But it's a start, and Democrats (in the Senate) and Republicans (in the House) need to get on with it.

The bill, which has bipartisan support on the Senate energy committee, would speed the review of natural gas export terminals; ease the way for hydroelectric, geothermal, and biomass power projects; better protect the electricity grid; permanently authorize a conservation fund; boost funding for research; and increase efficiency standards for federal buildings.

Could it have done more? Of course. The U.S. needs to reduce the amount of ethanol that's added to the nation's gasoline supply, for example, and lower subsidies for both renewable and fossil fuels so they compete on something closer to a level playing field. And an energy bill would be a logical place to include the most effective energy policy of all: a carbon tax.

Senate Democrats blocked a Feb. 4 vote on the bill, on the grounds that it did nothing to help residents of Flint, Mich., get clean water. House Republicans, meanwhile, are focused on including something that would ensure a presidential veto.

There's a difference between honest disagreements over what to include in a bill and blatant attempts to make legislation unpalatable to the other side. Senate Democrats should be willing to use another vehicle to provide (badly needed) assistance to Flint. House Republicans should realize that passing basic energy legislation that they essentially agree with is superior to passing nothing at all. Ⓑ

GEERT VANDEN WIJNGAERT/AP PHOTO

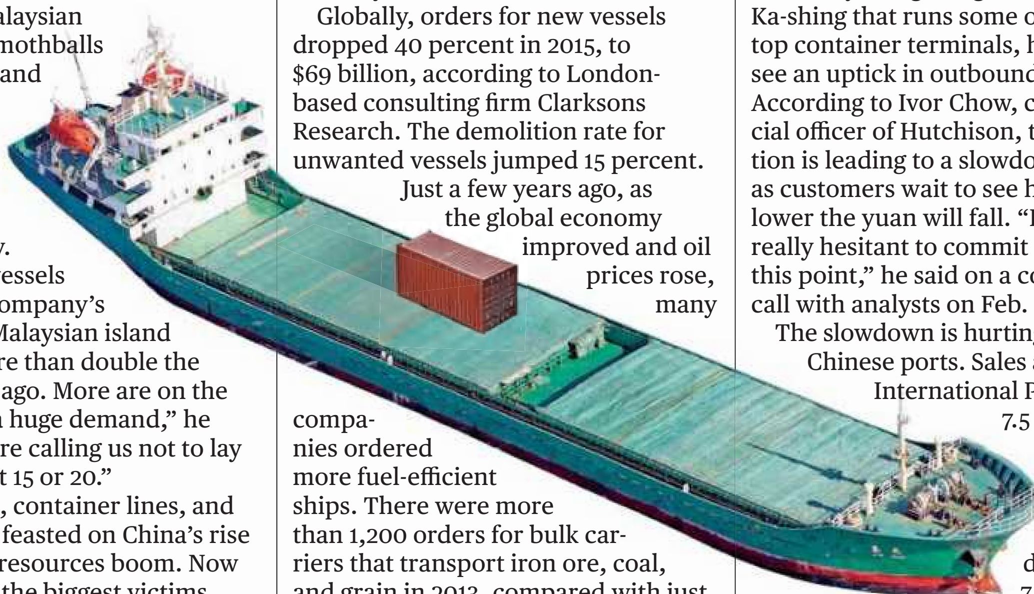

EVER-CHANGING LANDSCAPE
INNOVATION
OLD-FASHIONED

So Many Boats, So Little Cargo

▶ **The slowdown in Chinese exports and imports is affecting every corner of the shipping industry**

▶ **"People are calling us not to lay up one ship but 15 or 20"**

When business slows and owners of ships and offshore oil rigs need a place to store their unneeded vessels, Saravanan Krishna suddenly becomes one of the industry's most popular executives. Krishna is the operation director of **International Shipcare**, a Malaysian company that mothballs ships and rigs, and these days he's busy taking calls from beleaguered operators with excess capacity. There are 102 vessels laid up at the company's berths off the Malaysian island of Labuan, more than double the number a year ago. More are on the way. "There's a huge demand," he says. "People are calling us not to lay up one ship but 15 or 20."



Shipbuilders, container lines, and port operators feasted on China's rise and the global resources boom. Now they're among the biggest victims of the country's slowdown and the worldwide decline in demand for oil rigs and other gear amid the oil price plunge. China's exports fell 1.8 percent in 2015, while its imports tumbled 13.2 percent. The Baltic Dry Index, which measures the cost of shipping coal, iron ore, grain, and other non-oil commodities, has fallen 76 percent since August and is now at a record low. Shipping rates for Asia-originated routes have dropped, too, and traffic at some of the region's major ports is falling. In Singapore, the world's second-largest port, container traffic fell 8.7 percent in 2015, the first decline in six years. Volumes at the port of Hong Kong, the fourth-busiest, slid 9.5 percent last year. Beyond Asia, the giant port of Rotterdam in the Netherlands recorded a dip in containerized traffic for the year.

Globally, orders for new vessels dropped 40 percent in 2015, to \$69 billion, according to London-based consulting firm Clarksons Research. The demolition rate for unwanted vessels jumped 15 percent.

Just a few years ago, as the global economy improved and oil prices rose, many companies ordered more fuel-efficient ships. There were more than 1,200 orders for bulk carriers that transport iron ore, coal, and grain in 2013, compared with just 250 last year, according to Clarksons. Many of the ships ordered are now in operation, says Tim Huxley, chief executive officer of Wah Kwong Maritime Transport Holdings, a Hong Kong-based owner of bulk carriers and tankers. "You have a massive oversupply," he says.

The damage is especially severe in China, the world's leading producer of ships. New orders for Chinese shipbuilders fell by nearly half last year, according to the Ministry of Industry and Information Technology. In December, Zhoushan Wuzhou Ship Repairing & Building became the first state-owned shipbuilder to go bankrupt in a decade.

The yuan has dropped 6 percent since last August. While that should help exports, **Hutchison Port Holdings Trust**, a company controlled by Hong Kong billionaire Li Ka-shing that runs some of China's top container terminals, has yet to see an uptick in outbound business. According to Ivor Chow, chief financial officer of Hutchison, the devaluation is leading to a slowdown in traffic as customers wait to see how much lower the yuan will fall. "People are really hesitant to commit to orders at this point," he said on a conference call with analysts on Feb. 2.

The slowdown is hurting many Chinese ports. Sales at Shanghai International Port were 7.5 billion yuan (\$1.1 billion) in the third quarter, down from 7.6 billion yuan the year before, and net profit was 1.4 billion yuan, a decline of 18 percent. The Shanghai Shipping Exchange's containerized freight index has dropped 27 percent since the start of 2015. While container volume at Shanghai's port, the world's largest, grew 3.7 percent last year, that was down from 4.8 percent growth the previous year and was largely the result of taking market share away from high-cost rival Hong Kong, according to Bloomberg Intelligence analyst John Mathai.

The slide in oil prices is especially painful in Singapore, home to Keppel

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and Sembcorp Industries, the world's two largest producers of offshore oil rigs. Orders for the two companies dropped in 2015 to their weakest levels in six years. Singapore's state investment fund, Temasek Holdings, which has major stakes in both Keppel and Sembcorp, is discussing the sale of noncore assets or issuing new shares. "We have to plan for a longer winter," Keppel CEO Loh Chin Hua said on a call with analysts on Jan. 21.

South Korea in December announced plans to establish a $1.2 billion fund to help local shipping companies pay for new vessels they've ordered, according to the Ministry of Oceans and Fisheries. The government will push shipyards to downsize and focus on their core businesses—one shipbuilder operated a golf course. **Hyundai Heavy Industries**, the world's biggest shipbuilder, said on Feb. 4 that it had suffered its ninth consecutive quarterly operating loss, following a 1.7 trillion-won ($1.4 billion) loss in 2014.

The recession in shipping is causing trade friction. **Daewoo Shipbuilding and Marine Engineering** is in the worst position among Korea's shipbuilders. Korea Development Bank and another state-owned lender, Export-Import Bank of Korea, are leading a 4.2 trillion-won bailout of Daewoo. "We see this case as a problem," Shinichiro Otsubo, director of the shipbuilding division at Japan's Ministry of Land, Infrastructure, Transport and Tourism, told Bloomberg in December. "If this aid package keeps the firm from cutting capacity, the effect will be potentially big." Japan hasn't ruled out the possibility of filing a complaint with the World Trade Organization.

There are some bright spots. Companies that operate oil tankers have been busy as customers take advantage of record-low crude prices to build up their inventories: Orders for new tankers increased 14 percent last year, according to Clarksons. Back in Malaysia, International Shipcare's business is so strong that Krishna says the company is running out of places to store customers' ships. Since the start of December, demand has spiked about 30 percent. "It's unprecedented," Krishna says. He's hoping to add capacity.
—*Bruce Einhorn, with Carol Matlack*

The bottom line In Asia, port operators, shipbuilders, and shipping lines are suffering from the global loss of appetite for China's goods.

Vices

The Sin Taxes That Could Save Greece

- **The country is a major hub for the global trade in illicit cigarettes**
- **"It creates a big public revenue hole that taxpayers have to fill"**

On an ordinary morning on Stournari Street in downtown Athens, only a few blocks away from the epicenter of every riot the city has seen during the years of crisis, a man of Asian origin politely and openly offers cigarettes to passersby. The Chinese-made RGD smokes cost €1.50 ($1.70) a pack tax-free, less than half the taxed price of 20 Marlboros or Lucky Strikes at one of Greece's street kiosks. More than 4 billion illegal, untaxed cigarettes are sold in Greece each year, according to Philip Morris International's Greek affiliate, **Papastratos Aves**. The import duty alone on those 4 billion would bring €670 million in annual revenue.

Greeks could smoke, drink, and gamble their way out of their financial troubles, if only they paid the taxes on those habits. "Illicit cigarettes strip the Greek state of significant revenue that could be used for paying pensions, salaries, and social benefits," says Iakovos Kargarotos, vice president of Papastratos. "It creates a big public revenue hole that taxpayers have to fill."

The government of Prime Minister Alexis Tsipras promised to eradicate pockets of corruption and improve tax collection as a condition of Greece's latest bailout by the euro area and the International Monetary Fund. His failure to clamp down on tax evasion—on cigarettes, alcohol, and smuggled fuel as well as income and capital gains—has forced the government to impose more belt-tightening. Tsipras's latest proposals to raise mandatory pension contributions and increase taxes on farmers have sparked protests by farmers, white-collar professionals, and workers, bringing the country to a standstill.

Doubts over Tsipras's ability to push through budget cuts and tax hikes without losing his razor-thin majority have contributed to a selloff in government bonds and stocks, pushing prices to 25-year lows. Bank shares lost more than half their value this year through Feb. 8, as Tsipras struggled to satisfy creditor demands.

A thriving street market in contraband cigarettes, called "illicit whites," is just a 15-minute stroll from parliament. They originate in places such as China, Egypt, and Pakistan, reaching Greece on smugglers' "ghost ships" that pass on their cargo to smaller boats waiting offshore.

Greece has one of the highest rates of smoking in the world. More than 20 percent of cigarettes smoked are counterfeit, contraband, or untaxed, according to a Nielsen study cited by the local tobacco industry.

The best thing Greeks could do for the economy is quit. The cost of smoking, including hospital stays and lost working hours, is more than €3 billion a year, estimates Kostas Athanasakis, a researcher at the National School of Public Health. The Ministry of Finance didn't respond to requests for comment.

€670
million

Potential Greek tax revenue on illicit cigarettes

Tackling illegal trade in everyday products such as cigarettes should be simple compared ▶

◀ with white-collar tax fraud, but the politics is more complicated, says Ilias Lekkos, chief economist at Piraeus Bank in Athens. "The fact that large segments of Greek society benefit from tax evasion makes a clampdown extremely difficult." —*Nikos Chrysoloras*

The bottom line Despite pressure from its creditors, Greece's government has done little to tax billions of illicit cigarettes sold yearly.

Labor

They're Hiring In Eastern Europe

▶ **Companies are finding it harder to recruit skilled workers**

▶ **In Prague, "not speaking Czech isn't a problem"**

While double-digit unemployment is devastating lives in Spain and Greece, business owners in the European Union's east are experiencing the opposite problem.

Czech entrepreneur Zbynek Frolik says demand for his state-of-the-art hospital beds is so high that he must open a new factory. Because the Czech economy is booming, he can't find help. "At this point I just want any able-bodied person who wants to work," says Frolik, whose company, **Linet,** has annual sales of $240 million.

The cheap labor and untapped markets of Eastern Europe lured tens of billions of euros in investment into factories and other production sites after the Iron Curtain's collapse. Now, falling unemployment and the exodus of millions of workers in search of higher wages in richer European Union countries are exposing the limits of the east's low-cost model.

"Tatabanya used to be a synonym for industrial depression. Now it's a city challenged not by unemployment but by a shortage of available and quality labor."
—*Hungarian Prime Minister Viktor Orban*

Policymakers are warning of labor shortages across the 11 Eastern European countries that have joined the EU since 2004. In the Czech Republic, fast growth has resulted in the lowest unemployment rate in the EU—4.5 percent. In Slovakia, the world's biggest auto producer per capita, companies are struggling to find specialists in the industry, even as the country's fourth car plant is being built by **Jaguar Land Rover** in Nitra.

The global rout in emerging-markets stocks and bonds, which have driven down the value of the Polish zloty 5.6 percent and the Hungarian forint 1.1 percent against the euro in the past 12 months, is helping some countries' exporters remain competitive. But depending on weak currencies isn't a credible long-term strategy.

There are two ways to tackle the problem in the short term, says Radomir Jac, chief economist at Generali Investments CEE in Prague. The first is to boost salaries to keep young workers from leaving. The monthly minimum wage was about €330 ($369) in Hungary and the Czech Republic and €410 in Poland last year. That compares with €1,462 in Germany, according to Eurostat. The second is to import more workers. "In many regions, importing workers from Ukraine is the only remedy," Marek Sliwinski, a job market expert at employment agency Work Force, said in an e-mail.

Poland, the region's largest economy, is trying both methods. Unemployment fell to 7.1 percent in December, the lowest rate since 2008. It was 20 percent before Poland entered the EU, Eurostat says. Annual wages have more than doubled, to an average 32,446 zlotys ($8,222), since EU entry. Poland is also hiring Ukrainians.

The Czech economy, which has almost quadrupled since 1989, grew 4.7 percent in the third quarter compared with the same period in 2014. The Czech Industry Association has urged the government to help members fill 150,000 jobs they expect will go begging this year. Association members hope policymakers ease immigration procedures for workers from outside the EU.

Employers are already hiring foreigners from richer parts of the EU. Marie Janvier, from France, is a project manager for **Ariba,** a maker of procurement management software in Prague. She's on a team of seven with two Italians, a Spaniard, a Canadian, a Slovak, and one Czech. While she's happy at her job, "I don't think it would be hard to find work, considering the situation here," she says. "Not speaking Czech isn't a problem."

In the Hungarian city of Tatabanya, about 60 kilometers (37 miles) west of Budapest, flooring company **Graboplast** is trying to fill spots in a new factory. "Tatabanya used to be a synonym for industrial depression," Prime Minister Viktor Orban said on Feb. 4 as he inaugurated the plant. "Now it's a city challenged not by unemployment but by a shortage of available and quality labor." Orban wants to solidify Hungary's position as one of Europe's most industrialized states. He proposes capping high school and university admissions and channeling students to trade schools.

With hundreds of thousands of Hungarians having already gone west, it will be difficult to industrialize much further. The country's largest private industrial conglomerate, **Videoton**, is raising salaries, pushing employees to work overtime, and trying to become more efficient. Says Otto Sinko, Videoton's co-chief executive officer, "The system is stretched. Practically everyone who wants to work already has a job." —*Ladka Bauerova and Gabriella Lovas*

The bottom line Offering low-cost labor to manufacturers has served Eastern Europe well, but labor scarcity may call for a new approach.

Currencies

The Loonie Is Driving NHL Players Crazy

▶ **The pronounced weakness of the Canadian dollar results in less pay**

▶ **"There is definitely pain being felt and more pain to be felt"**

The NHL has a loonie problem. The Canadian dollar fell to 68¢ last month against the U.S. dollar, a 13-year low, and analysts think it could drop an additional 13 percent in 2016. The weakened state of the currency may cost the NHL hundreds of millions of dollars in lost revenue.

The NHL does all its business in U.S. dollars, and all players are paid in greenbacks. The league also

FROM LEFT: LINO CHIPANA/EL COMERCIO/GDA/ZUMA PRESS; REUTERS

The Daughter Rises

In Peru, presidential candidate **Keiko Fujimori** campaigns from her motorcade. She lost a 2011 bid but now has a huge lead over her top three rivals, who are polling 10 percent each. Her father, ex-President Alberto Fujimori, has been in jail since 2007 for corruption and death squad killings. Elections are on April 10. —*John Quigley*

Sept. 19, 2000

33%

Support in voter surveys

computes its total annual revenue in U.S. currency. Revenue for the league's seven Canadian teams comes in the form of Canadian dollars, which is then converted into U.S. dollars. This season it's going to take many more of the weak loonies to help the league reach its revenue target, estimated to be $4 billion. Chances are growing slim that the league will hit its mark.

That has implications for more than team owners. The teams and players split revenue 50-50. Money is withheld from each NHL player's paycheck and kept in escrow. If league revenue at the end of the season doesn't meet its target, money is taken from escrow to ensure an even split with the owners.

For the 2011-12 season, the players' haircut was 0.5 percent of their annual salaries. At the start of this season, the players' escrow accounts withheld 16 percent of salaries: That number just rose to 18 percent, as the Canadian dollar declined. Representatives are warning the players not to expect much back. "No one is happy about it," says NHL players agent Allain Roy.

About 33 percent, or $1.2 billion, of the league's $4 billion is expected to come in Canadian dollars. That includes sponsorships and ticket sales from the Canadian franchises, plus the league's monster CA$5.2 billion, 12-year television deal with **Rogers Communications**, a media and telecommunications company based in Toronto, which pays in loonies. The Canadian dollar has dropped 10 percent since the league's fiscal year began on July 1. That suggests the weakened currency could cost the league about $120 million in revenue.

While everyone in hockey is used to currency fluctuations, severe ones have had real consequences. In the mid- to late-1990s, when the loonie never went above 75¢, the Winnipeg Jets and the Quebec Nordiques moved to Phoenix and Denver, respectively.

"There is definitely pain being felt and more pain to be felt," says Ian Clarke, chief financial officer of **Maple Leaf Sports & Entertainment**, owner of the Toronto Maple Leafs, the NBA's Toronto Raptors, and Major League Soccer's Toronto FC. Although the Maple Leafs and other Canadian teams have hedged against their exposure to the loonie, their hedge contracts have started to expire.

When financial adviser Stew Gavin used to lay out the finances for NHL players who were his clients, he'd factor the escrow cost at 10 percent, which he says was "overly conservative." That model has been thrown out. "The reality is that, for your $4 million contract, your gross may be 15 to 18 to 20 percent less than that," says Gavin, a former NHL player and president of the Gavin Management Group. Future contracts may also contain less money—the salary cap is tied to league revenue, so as profits slow, so does the overall amount being paid to players.

The NHL and its players union have yet to finalize last season's budget, but two agents say they expect players to lose about 13 percent of their salaries to escrow rebalancing. This year may be worse, barring a rebound in oil prices, which would buoy the Canadian dollar. An exciting Stanley Cup series in some of the U.S.'s strongest hockey markets could also help the league make up some of the difference. (None of the Canadian teams are on track for the playoffs.) "At the end of the day, the league is healthy," NHL agent Roy says. "We just have to find a way to ride out this Canadian dollar issue." —*Eben Novy-Williams and Gerrit De Vynck*

The bottom line With the weak Canadian dollar making it hard for the NHL to reach its target revenue, players have to make their teams whole.

Edited by Christopher Power
Bloomberg.com

Just Don't Call Them Diapers

▶ **Sales of adult incontinence garments in the U.S. could equal those of baby diapers in a decade**

▶ **"Hey, I have bladder leakage, and it's no big deal"**

Thanks to the endless determination of parents to keep baby bottoms dry, **Kimberly-Clark**'s Huggies diapers brand has become a global powerhouse, with billions of dollars in annual sales. But the target consumers for one of the company's latest diaper lines aren't infants—or even their aged grandparents. Instead, ads for its Depend Silhouette line of disposable incontinence briefs feature laughing, long-legged models who look barely over 40. The personal-care giant has been aggressively running the fashion-style marketing pitches in mainstream magazines and on television, because adult incontinence is a market that's recently become too big—and lucrative—to remain in the shadows.

"We're trying to make the product more normal, and even fun, with real people in our ads saying, 'Hey, I have bladder leakage, and it's no big deal,'" says Jay Gottleib, head of Kimberly-Clark's adult and feminine-care business in North America.

Growth in the adult-diaper market is outpacing that of every other paper-based household staple in the U.S. Euromonitor International forecasts a 48 percent increase in sales in the category, to $2.7 billion in 2020 from $1.8 billion last year. That compares with expected growth of 2.6 percent, to $6.3 billion, during that period for baby diapers. And in only a decade, sales of diapers for adults could surpass those for babies at Kimberly-Clark and rival **Procter & Gamble**. As birthrates fall and life spans lengthen, the companies figure there's plenty of room for expansion, because babies grow out of diapers, but incontinent adults usually don't.

As many as 1 in 3 adults—more than 80 percent of them women—have bladder control issues, the Urology Care Foundation says. Causes include pregnancy and childbirth, health conditions such as diabetes and obesity, and changes that accompany aging, according to the Mayo Clinic.

To tap that market, manufacturers have rolled out marketing campaigns to make a leaky bladder seem if not fashionable, then at least not humiliating. Kimberly-Clark sponsored a free concert in New York featuring the Grammy-nominated indie pop band Capital Cities to promote its adult products. It even produced a **rap video** featuring Kimberly-Clark employees strutting their stuff around one of the company's factories while wearing nothing below the waist except its adult briefs. The rap lyrics explain that incontinence hits people of all ages and encourage listeners to "drop their pants for underwareness." The company also introduced a social media campaign to raise money for an

incontinence-awareness charity.

"They're driving home the point that attractive people in their 40s and 50s or even younger, not just nursing-home residents, can be wearing this under their clothing," says Marlene Morris Towns, a teaching professor of marketing at Georgetown University.

Incontinence briefs, available in different styles for men and women, look a lot like regular underwear and come in a range of colors. Instead of being stacked on shelves like baby diapers, some of Kimberly-Clark's latest adult incontinence gear comes in packaging that hangs on hooks in store displays and has transparent windows that show the absorbent disposables folded like cotton underpants. A box of 10 Depend Silhouette Active Fit briefs sells for $11.97, or about $1.20 each, at Walmart.com. A 44-count box of the company's Huggies Snug & Dry diapers for infants costs $7.97, or about 18¢ each.

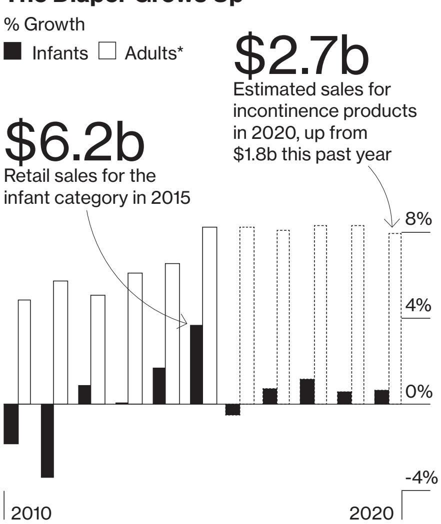
When casting the ads for its active-fit Silhouette briefs, the company hired models and brand ambassadors a generation younger than its former white-haired spokeswoman, the late actress June Allyson. Among them: comedian and television star Sheryl Underwood, 52, and slam poet "Mighty" Mike McGee, 40.

Svetlana Uduslivaia, a head of tissue and hygiene research at Euromonitor, says newer goods such as Depend Silhouette and P&G's Always Discreet are thinner and less discernible under clothing, and in general are designed for more physically active consumers. They "wouldn't be very suitable for those with more serious forms of adult incontinence usually associated with older seniors," she says. So the products' strong sales growth might suggest that younger people are drawn to them. A Kimberly-Clark spokesman says the company doesn't yet have numbers to show its more youthful push is working. It suggests many younger incontinence sufferers still use products not intended to handle the problem (such as sanitary pads) because of a reluctance to buy goods designed for seniors—a stigma that its media campaign hopes to end.

Kimberly-Clark has more than half the U.S. incontinence-garment business, with 56 percent of sales last year, compared with 9 percent for P&G and 7 percent for Sweden's **Svenska Cellulosa**, maker of the Tena brand of incontinence goods, Euromonitor estimates. Unlike Kimberly-Clark, P&G targets only women with one of its product lines—Always Discreet, introduced in 2014. Women already are familiar with the company's Always brand, which includes such female personal-care products as menstrual pads and liners. "Always Discreet has been very successful in bringing along a lot of the younger women, because it's a brand that they trust," says Yuri Hermida, vice president of North American baby and feminine care at P&G.

Hoping to grab an even bigger slice of the incontinence market, Kimberly-Clark last year introduced Poise Impressa bladder supports for women, one of the first incontinence products to be worn internally. It's designed to help prevent urinary leaks rather than simply absorb them. Inserted into the vagina like a tampon, it lifts and gives support to the nearby urethra, which in turn helps stop urine from leaking out. The target audience includes women who suffer so-called stress urinary incontinence, often triggered by coughing, sneezing, or even dancing. Ads for the product feature a smiling middle-aged woman and a marketing pitch that promises to "let you laugh without leaks." More than laughter, for Kimberly-Clark the products may bring in serious profits. —*Carol Hymowitz and Lauren Coleman-Lochner*

The Diaper Grows Up



FROM LEFT: COURTESY YOUTUBE; ILLUSTRATION BY 731
*DIAPER DATA: EUROMONITOR, INFANT GOODS INCLUDE DIAPERS, NAPPIES, AND PANTS. ADULT GOODS ARE INCONTINENCE PRODUCTS

The bottom line Sales of adult incontinence products are forecast to rise 48 percent from 2015 to 2020. Baby diaper sales will grow 2.6 percent.

Entertainment

YouTube Is Banking On Unicorns and Aliens

▶ **The video-sharing site looks to its stars to bring in more revenue**

▶ **"The strategy is to fish where the fish are"**

Lilly Singh, a 27-year-old **YouTube** personality, has delighted teenagers for six years from the comfort of her couch. Using a small video camera and a computer, Singh, known to her fans as "Superwoman," uploads funny sketches about her parents, her South Asian and Canadian heritage, and her crushes.

With almost 8 million subscribers following Singh's main channel for free, YouTube decided to invest in the Internet star when it heard she was making a documentary, *A Trip to Unicorn Island*. The film follows Singh as she tours the world performing sketches, singing, and giving motivational speeches—material similar to what she posts on her channel.

A Trip to Unicorn Island, which made its debut on Feb. 10, is one of several programs YouTube is promoting as part of its $9.99-a-month YouTube Red pay service, available to U.S. customers. ▶

◀ **Google**, which bought the video-sharing website in 2006 for $1.65 billion, plans to make YouTube more profitable by creating a revenue stream with Red. Like **Netflix** and **Amazon.com**, Google is offering original programs, but instead of Hollywood talent, Red is banking on the star power of homegrown personalities such as Singh to persuade fans to sign up.

"The strategy is to fish where the fish are," says Susanne Daniels, YouTube's global head of original content. Daniels, a teen TV programming veteran—she ran the WB Network from 1994 to 2003 and oversaw the hits *7th Heaven* and *Dawson's Creek*—inherited the original-programming initiative when she started at YouTube last summer. "We want to work with top YouTube stars," she says, "and differentiate their programming so that it was clearly something they'd not normally do for their own channel."

Red went live in October. In addition to *Unicorn*, the original shows include *Scare PewDiePie*, an adventure series starring Swedish YouTube sensation Felix Kjellberg, and two movies, *Dance Camp* and *Lazer Team*, from Web video production companies **AwesomenessTV** and **Rooster Teeth**, respectively. Several more programs are slated to premiere by mid-March. Budgets range from a few hundred thousand to several million dollars.

Singh

In 2012, YouTube announced plans to spend several hundred million dollars to create channels for Hollywood stars and major media brands to convince customers and advertisers that YouTube was better than TV. YouTube left these channels to fend for themselves, with mixed results.

This time, the company is more hands-on. For *Scare PewDiePie*, YouTube helped Kjellberg develop and produce the 10-episode series. It's paying to distribute and market *Unicorn*, produced by former MTV Chief Executive Officer Judy McGrath and her digital content company, **Astronauts Wanted**, and alien sci-fi comedy *Lazer Team*. The latter, the first feature film Rooster Teeth produced, opened in some theaters for a couple of weeks in January via Tugg, a website where fans request local screenings of films they like. It's now available exclusively online at YouTube Red.

YouTube hasn't said how many customers it hopes will sign up for Red. With more than 1 billion monthly users, it doesn't need to convince everyone, says Rich Raddon, co-CEO of Zefr, a software company that has helped pay-video services advertise on YouTube. Attracting even 10 percent, about 100 million people, would give it a bigger paid-subscriber base than Netflix and all cable TV providers.

Red also includes Google's streaming music service and ad-free videos. Ultimately, though, it's the quality of the programs that will persuade people to pay. "YouTube has this unique opportunity to build a subscription business," Raddon says. "This platform where anyone can upload videos has taken 12 years to build, and now they have to figure out how to subsidize the right kind of shows to drive payments." —*Lucas Shaw*

"This platform where anyone can upload videos has taken 12 years to build, and now they have to figure out how to subsidize the right kind of shows to drive payments"

The bottom line YouTube has rolled out original programs, hoping to turn many of its more than 1 billion users into paid subscribers.

Autos

Self-Driving Cars' Big Roadblock: Winter

▶ **"Snow smoke" disables sensors robot vehicles need to navigate**

▶ **"When it starts building up, you just lose functionality"**

In Jokkmokk, a hamlet just north of the Arctic Circle in Sweden, **Volvo Cars**' self-driving XC90 sport-utility vehicle met its match: frozen flakes that caked on radar sensors essential to reading the road. Suddenly the SUV was blind. "It's really difficult, especially when you have the snow smoke from the car in front," says Marcus Rothoff, director of Volvo's autonomous-driving program. "A bit of ice you can manage. But when it starts building up, you just lose functionality."

So Volvo engineers started moving the sensors. And next year, when Swedish drivers take their hands off the wheel of leased XC90s in the world's first public test of fully autonomous technology, the radar will be nestled behind the windshield, which wipers keep clear of ice and snow.

As automakers race to get robot cars on the road, they're encountering an obstacle very familiar to humans: Old Man Winter. Simple snow can render the most advanced computing power useless. That's why companies including Volvo Cars, owned by China's **Zhejiang Geely Holding Group**, and **Ford** are revving up efforts to prevent snow blindness.

With about 70 percent of Americans living in the snow belt, learning to navigate in rough weather is crucial for driverless cars to gain mass appeal and realize their potential to reduce traffic congestion and road deaths. "If your vision is obscured as a human in strong flurries, then vision sensors are going to encounter the exact same obstacles," says Jeremy Carlson, an autonomy specialist at IHS Automotive.

Driverless cars "see" the world around them using data from cameras, radar, and lidar, which bounces laser light off objects to assess their shape and location. High-speed processors crunch the data to provide 360-degree detection of lanes, traffic, pedestrians, signs, stoplights, and anything else in the vehicle's path. But snow can shroud cameras and cover the lane lines they must detect to keep a driverless car on course. Lidar also is limited because the light pulses it emits reflect off flakes, potentially confusing even a modest curtain of falling snow with an object to avoid, causing the car to hit the brakes.

Radar, which senses objects by emitting electromagnetic waves and has been used since 1999 in adaptive cruise control to maintain a set distance from other vehicles, is better. "If everything else fails, I can follow the preceding traffic," says Kay Stepper, vice president and head of the automated driving unit at German parts supplier **Robert Bosch**. "The radar is the key

element of that because of its ability to work robustly in inclement weather."

Ford, which declined interview requests, says it might have found a solution to snow-blanketed lane lines, according to a press release. The automaker is scanning roads in advance with lidar to create high-definition 3D maps that are more accurate than images from global positioning satellites, which can be 10 meters off.

Ryan Eustice, an associate professor of engineering at the University of Michigan who's worked with Ford on the problem since 2012, says they've also found a way to filter the "noise" created by falling snowflakes. The filtered data combined with information from the 3D maps allow the car to pinpoint its location to within "tens of centimeters," he says. "That's high enough accuracy that we know exactly what lane we're in."

Still, lane lines can become meaningless in a snowstorm, as human drivers blaze their own trails in the ruts created by vehicles in front of them. The solution may be artificial intelligence, says Danny Shapiro, senior director of automotive at processor maker **Nvidia**, which says its latest computer brain can perform as many as 24 trillion "deep learning operations" per second. Deep learning trains a robot car, based on millions of miles of driving experience loaded into its software and continually updated. So in a snowstorm, the car will know it should follow the ruts rather than stay within the lane lines. "It's very similar to how a human learns, by experience," Shapiro says.

Also like a human, a driverless car can get disoriented in a whiteout. "There's been a lot of hype in the media and in the public mind's eye" about the technology for self-driving cars "being nearly solved," Eustice says. "But a car that's able to do nationwide, all-weather driving, under all conditions, that's still the holy grail." *—Keith Naughton*

The bottom line About 70 percent of Americans live in the snow belt. So carmakers are trying to develop driverless vehicles that can "see" in snow.

Edited by James E. Ellis and Dimitra Kessenides
Bloomberg.com

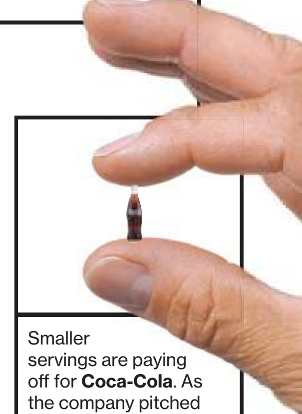
CLOCKWISE FROM LEFT: GETTY IMAGES (2); BLOOMBERG (1); ALAMY (1)

Briefs

By Kyle Stock

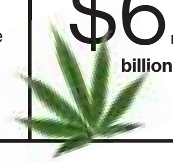
The Force Awakens

The *Star Wars* force proved strong for *Walt Disney* and *Hasbro*. The latest chapter in the space opera pushed profit at Disney's film unit up 86 percent, to $1 billion in the quarter ended on Jan. 2. *Star Wars* action figures helped Hasbro sales rise 13 percent, to $1.5 billion, in the quarter ended on Dec. 27. India blocked *Facebook*'s free Internet app as part of a hotly debated ruling in favor of net neutrality. The government was concerned that Facebook would prioritize some online content. Facebook CEO Mark Zuckerberg said in a statement he was disappointed, but the company won't give up on a plan to blanket the country with free Web service. *Zenefits* CEO and co-founder Parker Conrad resigned after the company came under fire for lax compliance with state insurance rules. The health-insurance brokerage tapped Chief Operating Officer David Sacks to replace him. Once a venture capital darling, Zenefits recently hired an accounting firm to conduct a third-party review of its insurance licensing procedures. Bonuses are outpacing business at *Alibaba*. In the nine months through December, the Chinese e-commerce giant said share-based compensation jumped 37 percent and revenue increased 31 percent. Alibaba's workforce grew only 6 percent last year. Shares of U.S. utilities and coal mining outfits rose as the Supreme Court put on hold federal regulations to curb carbon dioxide emissions from coal-fired power plants. More than 24 states joined the energy industry in blocking the Obama administration's Clean Power Plan.



Smaller servings are paying off for **Coca-Cola**. As the company pitched mini-cans and 8-ounce bottles in the recent quarter, its sales volume fizzed up 3 percent.

The estimated market for legal U.S. marijuana in 2016—a 24 percent increase from the previous year. About 80 percent of the trade is from medical sales.



$6.7 billion

CEO Wisdom

"Anytime a story breaks, we're responding right away, because misinformation gets out there, and people think, well, that is the gospel."
—Walter Robb, co-CEO, Whole Foods Market

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How to Give Back $157m

▶ Super PACs have a problem once their favored presidential candidates drop out

▶ "A lot of donors probably assume that the money…has to be used on politics"

All last year super PACs had one goal: raise as much money as possible for the candidates they backed. They succeeded. In 2015 the groups, which can collect unlimited funds to support political causes, amassed about $343 million on behalf of presidential candidates—an unprecedented amount. About $157 million remained in super PAC accounts on Dec. 31, the last time they were required to file financial statements with the Federal Election Commission (FEC); of that, more than half was held by super PACs supporting Republicans John Kasich, Chris Christie, Carly Fiorina, Marco Rubio, and Jeb Bush. Those groups spent heavily in New Hampshire, fueling more than $40 million in ad buys in the weeks before the state's Feb. 9 primary, and an additional $12 million in South Carolina, where Republicans will hold their primary on Feb. 20. (Christie and Fiorina announced on Feb. 10 they were suspending their campaigns.) As other Republicans come under increasing pressure from the party to win or get out of the way, the super PACs face a quandary: what to do if they've raised more money than they end up spending.

In September, Wisconsin Governor Scott Walker, a favorite of Tea Party activists, became the first major Republican to drop out of the race. His campaign was going broke after spending lavishly on staff salaries and travel, and Walker decided to back out rather than incur additional debt. In November he sent out an e-mail soliciting donations to pay off more than $1 million in outstanding bills. "We feel personally obligated to make sure that every small business that extended us their good faith and credit is repaid," Walker wrote.

Unintimidated PAC, the group supporting Walker, still had about $20 million of the $23 million it had raised to support Walker's bid. By law, Unintimidated was prohibited from bailing out the campaign but faced very few other restrictions. Candidates are strictly regulated on fundraising and spending, but super PACs aren't ▶

PHOTO-ILLUSTRATION BY 731; FROM LEFT: JABIN BOTSFORD/GETTY IMAGES; DENNIS VAN TINE/MEDIAPUNCH; CHRISTOPHER FURLONG/GETTY IMAGES; DANIEL ACKER/BLOOMBERG; ANDREW LICHTENSTEIN/CORBIS; DATA: FEDERAL ELECTION COMMISSION

◀ bound by the same safeguards. "A lot of donors probably assume that the money they give to political committees has to be used on politics," says Paul Ryan, deputy executive director of the Campaign Legal Center, a non-profit watchdog that's filed complaints against several super PACs. "If they do assume that, they'd be wrong."

According to FEC filings, Unintimidated refunded its surplus, about $18 million. "We never had any thought or plan other than that we would return the funds to the donors," says Chris Ashby, the group's lawyer. "We felt like that was the right thing to do." The biggest check went to Diane Hendricks, a billionaire who heads the largest wholesale roofing supply company in the U.S. Hendricks, a longtime Walker backer, gave $5 million to Unintimidated; she got $4 million back. The super PAC also returned money on a pro-rated basis to Richard and Elizabeth Uihlein, who own a shipping supplies business, and to Marlene and Joe Ricketts, the founder of TD Ameritrade, whose family owns the Chicago Cubs.

After the Supreme Court cleared the way in its 2010 *Citizens United* decision for individuals and corporations to donate unlimited amounts to super PACs, many thought the beneficiaries would be interest groups that support multiple candidates. Instead, super PACs quickly became a vehicle for wealthy donors to privately finance specific candidates. In 2012, Winning Our Future, a super PAC created to support Newt Gingrich's presidential bid, raised $23.9 million, most of it from casino mogul Sheldon Adelson, his wife, Miriam, and their children. When Gingrich dropped out of the Republican primary race in May 2012, the super PAC had $5.6 million left in the bank; it refunded $5 million to Adelson the day Gingrich quit.

Not all super PACs have followed that model. Restore Our Future, a super PAC created to support Mitt Romney, raised a total of $153 million and spent almost all of it on the Republican's failed campaign against President Obama. It finished 2012 with less than $500,000 in the bank, though in 2013 it received about $700,000 in reimbursements for ads that never ran. Rather than return the remainder to donors, Restore Our Future ultimately passed most of its money on to other political groups to back Republican candidates. These included the Republican Governors Association and another super PAC started by Romney called America Rising. (Romney, who briefly flirted with making another run, hasn't yet endorsed anyone.) The group had about $153,000 on hand as of Dec. 31.

In many cases, the people running super PACs keep burning through their cash even as the candidates they're supposed to be supporting flounder. "The more calls you can make, the more doors you can knock on, the more ads you can run—at the end of the day, more is better than less, and all of the above is better than one or the other," says Lara Brown, director of George Washington University's political management program, which offers a course in running super PACs. Donors often want super PACs to do everything possible to keep even long-shot candidates afloat. "I expect some big-ticket donors, if they know the super PAC hadn't spent all of their money or were saving their fire-power for later, may be asking for refunds," says Sheila Krumholz, executive director of the nonprofit Center for Responsive Politics, another campaign-finance watchdog.

Sometimes the pressure pays off. Right to Rise USA, which raised more than $100 million in 2015 to support Jeb Bush, spent more than $25 million on ads in New Hampshire, including many targeting Bush's nemesis, Florida Senator Marco Rubio. Bush earned a fourth-place finish in New Hampshire, ahead of Rubio. It's enough to keep Bush in the race through South Carolina, where the group has spent $3.8 million on TV ads since the beginning of the year. It held $59 million at the end of 2015.

While there's no law preventing staffers who run super PACs from buying yachts and sailing off into the sunset, donors may be able to count on political operatives' instinct for self-preservation. Only about 85 donors cut checks of $1 million or more last year. "The folks who are involved in financing and operating super PACs are all folks who are professionals at what they do," says Unintimidated's Ashby. "They want to work again in politics." —*Tim Higgins*

The bottom line Super PACs with money left over after candidates drop out have to decide whether and how to return donations.

Campaigning

Hillary Finds Pahrump As Fabulous as Vegas

▶ **The Clinton campaign works to score delegates in rural Nevada**

▶ **"There's a lot of important voters out there"**

In the days before the New Hampshire primary, Tom Perez, the U.S. secretary of labor, went out to stump for Hillary Clinton in Nevada, where the Feb. 20 caucus is the next big event on the Democratic circuit. Before stopping in Las Vegas, the state's largest city, Perez headed to the unincorporated town of Pahrump, along the California border. "When I talked to Hillary, she said, 'Make sure you get out to Pahrump, because there's a lot of good people out there, and there's a lot of important voters out there,'" he told a crowd of 30 volunteers gathered at the local campaign office.

A few days later, Perez was followed by an even more powerful campaign surrogate: Bill Clinton. Pahrump, population 36,000, can expect to get a lot more love between now and the vote. It's home to most of the residents of

HORACE LANGFORD JR.

2017 Budget

Four trillion, one

Total requested by **Barack Obama** in the final budget proposal of his presidency

Bill Clinton campaigning for Hillary in Pahrump, Nev., on Feb. 6

sprawling Nye County, the largest in the state. The campaign, Perez said after his appearance, is following an “every county” strategy and pushing well beyond Las Vegas and Reno into less populated areas of the state. “I’m here to send a very, very clear signal to the residents of Pahrump that Hillary Clinton wants to hear their concerns and takes them seriously.”

That delights Will Blythe, an unemployed construction worker who didn’t caucus in 2008 because he mistakenly thought it required driving to Las Vegas. This time around he’s not just planning to caucus for Clinton but also volunteering for her campaign, along with his wife, who had cancer detected and treated after she got insurance under the Affordable Care Act. “We almost feel like we owe Obama our life,” Blythe says.

After losing the New Hampshire primary to Bernie Sanders, Clinton is counting on Nevada to deliver her a decisive victory. In 2008 she won the Nevada caucus by 602 votes over Barack Obama, but Obama netted more delegates because of the state’s caucus math, which gives Democratic voters in Nevada’s rural precincts extra weight, rewarding candidates who venture into the desert looking for support. “We didn’t win,” says Emmy Ruiz, the first Nevada organizer Clinton hired in the 2008 race and now head of her campaign there. “I think that’s part of what informed our strategy here and part of why it’s so important to build that organization.” This year precincts in counties with 400 or fewer Democrats will get one delegate for every five registered Democrats; those in counties with more than 4,000 registered party members will get one delegate for every 50 registered Democrats. “Let’s say our opponent had 10,000 more supporters than we did come caucus day,” says Ruiz, “but they were all in the same two precincts—doesn’t matter, we would win everything in a landslide.”

Clinton’s operation relies heavily on volunteers, as it did in 2008 in Nevada, where her campaign was managed by Robby Mook, now in charge of Clinton’s national campaign. Mook is a veteran of Howard Dean’s 2004 presidential campaign, which adopted organizing tactics from Marshall Ganz, a longtime United Farm Workers strategist. “Part of what we learned is that you can have an organization that vests real responsibility with volunteers and holds them accountable and is aspirational in the very way that it’s organizing itself,” says Karen Hicks, who oversaw Dean’s New Hampshire campaign, where Mook worked, and joined Clinton in 2007 as an adviser. “On the Obama campaign they did it to scale in 2008, as we did in pockets on the Clinton campaign.”

Ruiz worked alongside Mook that year and is using the same approach now. At twice-weekly Spanish-language phone banks at the Clinton campaign’s East Las Vegas office, volunteers are responsible not only for placing calls but also for recruiting friends to join the operation, then reminding them to show up—a form of peer pressure that’s more effective than hearing the same message from paid staffers. “I don’t even have to be there,” says Clinton staff member Natalie Montelongo, who manages about two dozen volunteers.

Kavin Burkhalter, who works in retail sales, says he spends so much time working for the Clinton campaign in Las Vegas that his partner and coworkers call it his “free job.” He routinely puts in 20 to 30 hours a week and has signed up a half-dozen friends to volunteer since the former secretary of state formally announced her candidacy last April. “I went to her very first town hall here and barely got a selfie with me and her 25 feet away, and that was my most prized picture in the world,” Burkhalter says.

Clinton has an advantage over Sanders, who didn’t set up shop in the state until October. “The Clinton people have been here longer, and they’ve hired folks who were here in 2008,” says Yvanna Cancela, political director for Unite Here! Local 226, which represents Las Vegas hotel and casino workers. (The union has remained neutral.) But, she cautions, “While I think she has an advantage, I also think nothing is impossible here.”

Joan Kato, Sanders’s Nevada director, says the fervor of his volunteers will help close the organization gap. “They’re the blood,” she says. “We’re the veins that help move the blood to the heart.” Kato says Sanders volunteers have been involved in administrative minutiae such as scouting for office space and in organizing concerts and marches to raise awareness of Sanders’s campaign. But even some of the Vermont senator’s biggest supporters doubt he can match Clinton’s ▶

$56b
Eliminating tax breaks for the rich

$15b
Capital-gains tax reform

Revenue

The White House plan includes an additional $108 billion from cost savings, new fees, and closing tax loopholes.

e hundred forty-seven bill

Spending

Congressional Republicans last October limited the government’s discretionary spending—everything but Medicare, Social Security, and interest on the national debt—to $1.07 trillion. These are some of Obama’s requests.

$1.5b
To upgrade government IT

◀ organization in time for the caucuses. That includes Tick Segerblom, the only current Nevada legislator who's endorsed Sanders: "To win Nevada, he needs people that just come out of the blue." —*Josh Eidelson*

The bottom line After losing in New Hampshire, Hillary Clinton is counting on her organizers in Nevada to deliver her first clear-cut victory.

Elections

Even in the GOP, It's Cool to Hate Wall Street

▶ **The Senate banking chair is the latest to slam banks**

▶ **"You would think that Shelby is running against Bernie Sanders"**

When it comes to attacking Wall Street, no one can match Bernie Sanders's conviction. But the Vermont senator's eagerness to jail, fine, and tax bankers has overshadowed another group of politicians who have unexpectedly turned into vocal critics of the biggest banks: Republicans.

At events leading up to the Feb. 9 New Hampshire primary, Donald Trump railed against what he characterized as corporate "bloodsuckers" who control the government through their campaign contributions—echoing *Rolling Stone* writer Matt Taibbi's description of Goldman Sachs as "a great vampire squid wrapped around the face of humanity." Trump has gone after Goldman, too, accusing the bank of buying influence over Republican rival Ted Cruz. In January the Texas senator admitted he'd failed to report a $1 million loan from Goldman Sachs and another loan from Citibank. "Goldman owns him," Trump tweeted on Jan. 16. "He will do anything they demand." A Jan. 13 *Bloomberg Politics/Des Moines Register* Iowa Poll found that this was Trump's single most effective attack against Cruz.

$127m For free meal programs for kids during summer months

Trump is hardly the only Republican presidential candidate using Wall Street as a cudgel. In television ads, New Jersey Governor Chris Christie's super PAC lambasted Ohio Governor John Kasich, who detoured into finance after leaving Congress in 2001. "As a banker at Lehman Brothers, a Wall Street bank that failed," a narrator darkly intones, "Kasich made millions while taxpayers were forced to bail out Wall Street." Marco Rubio's super PAC has run ads going after Jeb Bush, another Lehman veteran, for supporting "Wall Street bailouts."

Why are Republicans turning on the financial giants that have been their biggest benefactors? "Trump's surge has been a big wake-up call, and so has Bernie Sanders's," says Kristen Soltis Anderson, co-founder of Echelon Insights, a Republican polling firm. "But Mitt Romney's loss is still reverberating with Republicans, too. So many of them think, 'That's an election we should have won—and we lost because we were never able to distance ourselves from being painted as the guys who drove the economy into the ground.'"

This concern extends well beyond the presidential race. In Illinois, Senator Mark Kirk, a Republican, has criticized his likely Democratic opponent, Representative Tammy Duckworth, for owning Goldman Sachs stock. The most striking example of a Republican targeting Wall Street is the chairman of the Senate Banking Committee, Richard Shelby of Alabama.

$330m For the Commodity Futures Trading Commission, a 32 percent increase, to pay for 183 additional employees to help meet Dodd-Frank requirements

"We've seen more Republican ads slamming individual banks by name in the past few weeks than we probably saw in all of 2012." —*Kantar Media's Elizabeth Wilner*

Shelby, who's being challenged by a Tea Party candidate, Jonathan McConnell, in the state's March 1 primary, has already spent almost $3 million on TV ads—more than anyone else in Congress—many of them attacking Wall Street banks. "You would think that Shelby is running against Bernie Sanders," says Jennifer Duffy, who tracks Senate elections for the nonpartisan *Cook Political Report*. Shelby won't be giving potential critics any new material. He said on Jan. 29 that he'd halt his committee's work until later in March: "I have a primary, you know."

Political professionals have been struck by Shelby's attack on banks not only because he chairs the Banking Committee and has received enormous largesse from financial companies—$2.7 million this Senate cycle, the nonprofit Center for Responsive Politics says—but also because his TV ads have been extraordinarily aggressive, naming individual banks such as Bank of America, Morgan Stanley, and Wells Fargo. "Calling out banks by name and logo is extremely rare for Republicans," says Elizabeth Wilner, senior vice president for political advertising at Kantar Media, which tracks political ads. "It's rare, period—even back in 2012, when we were just emerging from the recession, we saw a lot of ads slamming 'Wall Street banks' or 'big banks.' But few ads specified banks by name, and those tended to be Democratic ads. We've seen more Republican ads slamming individual banks by name in the past few weeks than we probably saw in all of 2012."

Despite the

$7b New oil tax of $10.25 a barrel

$1.8b For the Securities and Exchange Commission, an 11 percent increase, to hire additional investigators

$7.5b To fight Islamic State, a 50 percent increase

lion, two hundred twenty-

$10b Higher tobacco taxes

$40m Coding classes for kids

$221m Grants to states for paid parental leave

ILLUSTRATION BY GRAHAM ROUMIEU

bipartisan chorus of condemnation, Democrats and Republicans have different reasons for the attack. Inspired by Sanders, Democrats want to go on the offense and crack down on Wall Street. For Republicans such as Shelby, the purpose is primarily defensive: to stave off a populist insurgency from the Right. "Republicans never successfully litigated their own guilt or innocence in the financial crisis," Anderson says. "They're worried that voters will do it on their own." —*Joshua Green, with Chloe Johnson*

The bottom line Republicans up and down the ballot are trying to harness voters' anger by criticizing Wall Street donors.

Education

For-Profit College Fraud Has a Public Cost

▶ **Taxpayers foot the bill for students deceived by schools**

▶ **"It went on for so long that the dollar amounts ... are massive"**

Like many for-profit colleges, Chicago-based **Computer Systems Institute** (CSI) advertises its courses with a maximum dose of sunshine. "Get the English language training to meet your goals!" its website announces next to the image of five smiling, hugging young people. For years recruiters promised students they'd get good jobs as medical assistants upon graduation. That turned out to be a pipe dream: Graduates, many of whom took out loans of as much as $15,000 to attend, ended up doing low-wage work as cashiers, housekeepers, and package handlers.

On Feb. 1 the U.S. Department of Education said CSI students would lose access to government-backed financial aid because the school submitted false data about its job placement rates. Another for-profit chain, Beverly Hills-based Marinello Schools of Beauty, said it would close its 56 locations on Feb. 4 after the government cut off student aid. The Obama administration described its move as a victory in the effort to reduce fraud in education loans. But there's a catch for taxpayers: The government could be on the hook for loans already made to students whose schools have broken state laws.

Since June, when the Education Department opened a formal channel for students to ask for loan forgiveness, thousands of borrowers have applied to cancel $164 million in federally backed student loans. So far the government has agreed to forgive about $28 million. Each time the government roots out another bad apple, it opens up the possibility that thousands more people will have grounds on which to demand debt forgiveness. "The department is trying to clean up years of abuse and fraud by schools," says Ben Miller, an education expert at the Center for American Progress, a Washington think tank. "It went on for so long that the dollar amounts involved are massive."

Students at CSI and Marinello have taken out more than $256 million in government-backed loans since 2012. Only those who can show they were deceived would be eligible for relief under Department of Education rules. "The department is committed to making sure that students who were defrauded receive every bit of debt relief they are entitled to," says Education Department spokeswoman Denise Horn.

$6b
New fee on firms with assets over $50b

The department investigated companies that CSI claimed had hired its students, including one called Home Health Consultants. According to the government, owner Zoharel Quinn said he set up CSI students with marketing jobs or employed them to "cook and clean for the elderly." In fact, investigators found Quinn wasn't hiring students for permanent jobs and was paying below minimum wage. CSI representatives didn't respond to repeated requests for comment.

Twenty-three Marinello campuses in California and Nevada accepted students without high school diplomas, misrepresented the quality of the program to participants, and charged excessive fees if students needed to make up classes, according to the Education Department. Marinello spokesman Joe Hixson says the school denies the allegations. "It's really unfortunate that the department is trying to drive out a place that has a lot of history and that has licensed tens of thousands of students," he says.

The for-profit education business is still attracting investment. On Feb. 8 a consortium led by Vistria Group agreed to buy Apollo Education Group, which operates the University of Phoenix, for $1.1 billion. Vistria's chief operating officer, Tony Miller, who served as a deputy secretary of education in the Obama administration, will become chairman of Apollo once the deal is complete.

For the government, canceling debt for students defrauded by for-profit schools may just speed up the inevitable. Graduates of schools that aren't adequately preparing students to find work are likelier to default, says Miller of the Center for American Progress: "Realistically, a lot of the loans that are going to get forgiven are ones that were never going to get repaid, anyway." —*Natalie Kitroeff, with Marthe Fourcade*

The bottom line The government will forgive about $28 million in loans taken out by students whose schools engaged in deceptive marketing.

Edited by Allison Hoffman
Bloomberg.com

$200m
Letting states negotiate Medicaid drug prices

$763m
For space travel and exploration

-four million dollars

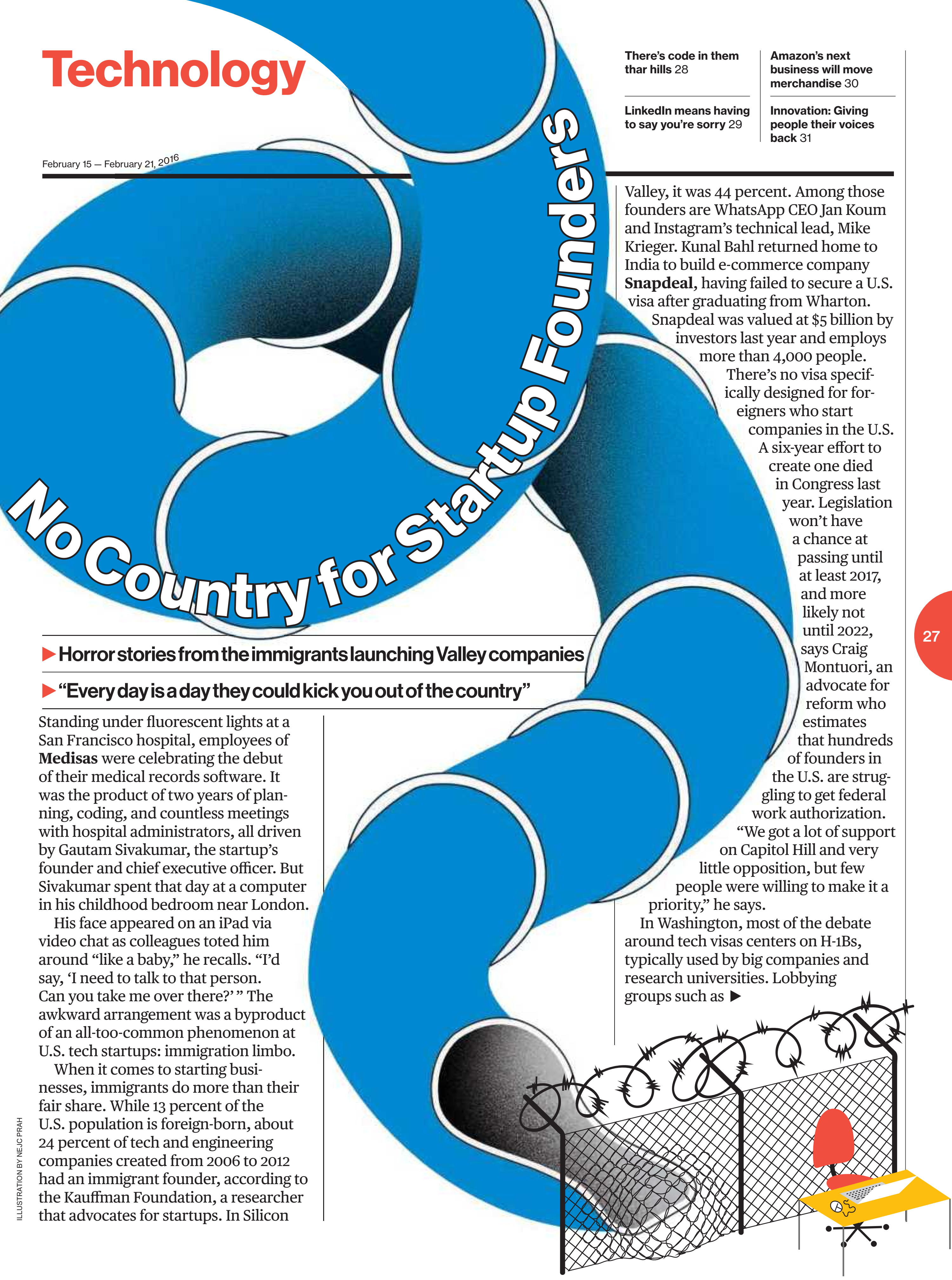
The Totals

The White House projects revenue of $3.6 trillion in 2017 and a deficit of $503 billion —a decrease of 18% from 2016.

$755m
Funding for cancer research

$1.4b
For a new FBI headquarters

February 15 — February 21, 2016



No Country for Startup Founders

▶ Horror stories from the immigrants launching Valley companies

▶ "Every day is a day they could kick you out of the country"

Standing under fluorescent lights at a San Francisco hospital, employees of **Medisas** were celebrating the debut of their medical records software. It was the product of two years of planning, coding, and countless meetings with hospital administrators, all driven by Gautam Sivakumar, the startup's founder and chief executive officer. But Sivakumar spent that day at a computer in his childhood bedroom near London.

His face appeared on an iPad via video chat as colleagues toted him around "like a baby," he recalls. "I'd say, 'I need to talk to that person. Can you take me over there?' " The awkward arrangement was a byproduct of an all-too-common phenomenon at U.S. tech startups: immigration limbo.

When it comes to starting businesses, immigrants do more than their fair share. While 13 percent of the U.S. population is foreign-born, about 24 percent of tech and engineering companies created from 2006 to 2012 had an immigrant founder, according to the Kauffman Foundation, a researcher that advocates for startups. In Silicon Valley, it was 44 percent. Among those founders are WhatsApp CEO Jan Koum and Instagram's technical lead, Mike Krieger. Kunal Bahl returned home to India to build e-commerce company **Snapdeal**, having failed to secure a U.S. visa after graduating from Wharton. Snapdeal was valued at $5 billion by investors last year and employs more than 4,000 people.

There's no visa specifically designed for foreigners who start companies in the U.S. A six-year effort to create one died in Congress last year. Legislation won't have a chance at passing until at least 2017, and more likely not until 2022, says Craig Montuori, an advocate for reform who estimates that hundreds of founders in the U.S. are struggling to get federal work authorization. "We got a lot of support on Capitol Hill and very little opposition, but few people were willing to make it a priority," he says.

In Washington, most of the debate around tech visas centers on H-1Bs, typically used by big companies and research universities. Lobbying groups such as ▶

ILLUSTRATION BY NEJC PRAH

◀ Mark Zuckerberg's FWD.us say more temporary work visas would keep U.S. companies from losing out on top talent. Protectionist legislators and Republican front-runner Donald Trump say they depress wages and take jobs away from Americans. Either way, H-1Bs often aren't a practical option for startups, because they're tough to get and meant for employees, not owners.

Sivakumar, like many startup founders, applied for an extraordinary ability work permit, also known as a "rock star" visa because of its use by famous musicians. (Justin Bieber has one.) In 2013, after a three-month stint with business incubator Y Combinator, Sivakumar incorporated Medisas in the U.S., met with investors, and began recruiting while hopping back and forth from the U.K. Once he applied for a visa, attorneys advised him not to return to the U.S. until it was approved to avoid agitating officials. For nine months he lived with his parents in England and kept California hours, sleeping during the day and working through the night with a webcam pointed at his face. "I didn't see the sun for four or five months," he says. "We were trying to negotiate six-figure deals over an iPad screen."

24%
of tech and engineering companies created from 2006 to 2012 have an immigrant founder

The tech industry has begun taking matters into its own hands. Montuori started the Global Entrepreneur in Residence Coalition, which is working with the University of Massachusetts at Boston and the University of Colorado at Boulder to wrangle the schools' H-1Bs for would-be founders. Unlike companies, which enter a lottery for a limited number of H-1B spots each year, colleges can apply for as many as they want. The group says it's secured about 10 for startup founders so far.

Unshackled, a $4.5 million venture fund, has taken a more radical approach. The fund offers visas and as much as $160,000 to immigrant entrepreneurs in exchange for 5 percent of their companies. So far, Unshackled has doled out 12 visas this way. "The same way a developer looks at a code base and comes up with the best product solution, we're going to look at the legal code base and come up with the best way to support immigrant entrepreneurs," says founding partner Manan Mehta.

13%
of the U.S. population is foreign-born

The legality of Mehta's immigration hack is questionable, says Peter Roberts, an immigration lawyer who works with Y Combinator. H-1B workers are only supposed to be paid by a single employer, and stock in the founder's own startup could be considered a second source of compensation. Sharon Rummery, a spokeswoman for U.S. Citizenship and Immigration Services, referred questions about the programs to a statement saying visa applicants should consult the application forms. "The original intent of the program is good," says Senate Judiciary Committee Chairman Chuck Grassley (R-Iowa), who introduced a bill in November that would limit H-1B visas. "But the abuse of the system is real."

For now, some founders have remained in the U.S. on tourist or business tourist visas, which forbid working or earning money while in the country. Deferring compensation is easy enough, but what constitutes work isn't well-defined. "Is talking to investors work?" says Bastian Lehmann, CEO and co-founder of the courier startup **Postmates**. "If it is, you're not supposed to do it. But it's not a rule. It's in the opinion of the border guard that you happen to talk to."

Lehmann, who's a British citizen, spent Postmates' first year ducking in and out of the U.S. on a tourist visa. He was always fearful of crossing a line that could get him banned. Eventually, he secured a visa tied to his job, but that presented new problems. "As CEO, you want to build a large company, but every nine months, you have to get your visa renewed, and suddenly the company is 80 or 90 people, and you're like, 'S---, I hope nothing goes wrong with this extension,' " says Lehmann, whose company has about 240 employees. "The higher the stakes on what you're building, the weirder that feeling becomes."

Applying for a visa takes at least six months and can cost $10,000 or more in legal fees and other expenses. It also takes a mental toll. "When you talk to other people in San Francisco, you don't want to talk about these visa issues that make you cry every day," says Aurora Chisté, an Italian who spent a year and a half trying to build up a company in the U.S. while visa delays kept her out. "You know that every day is a day they could kick you out of the country, but you hide those things because you know it could affect business."

44%
of companies created in Silicon Valley have an immigrant founder

It could indeed, says Jeff Bussgang, general partner at venture firm **Flybridge Capital Partners**. "VCs don't want to invest in entrepreneurs who are at risk of being sent away," says Bussgang, who has been involved in efforts to establish a founder visa. "It's a huge distraction." In Riga, Latvia, **Browserling** co-founder Peteris Krumins has been waiting for six years to get his business tourist visa renewed. His U.S. co-founder has moved on from the app-testing venture. "Our partnership fell apart," Krumins says.

Sivakumar's story has a happier ending. In July 2014 he got his rock star visa to work for Medisas and no longer has the threat of deportation looming over his head. Still, he can't help but wonder what might have been. Medisas has 20 employees, instead of the 60 or 70 he says it could have had without his year of delays. "We were in hibernation mode," Sivakumar says, "until this was resolved." *—Ellen Huet*

The bottom line Startup founders and backers are pursuing a range of unconventional ways to cut through the visa logjam.

Jobs

Putting the App In Appalachia

▶ **With coal collapsing, Kentucky miners are learning to code**

▶ **"We've got a lot of high-skilled hillbillies here"**

Before cutbacks took his job, Jim Ratliff worked 14 years in the mines of eastern Kentucky, drilling holes and blasting dynamite to expose the coal that's powered Appalachian life for more than a century. Today he rolls into an office at 8 a.m., settles down at a small desk, and begins tapping at a keyboard.

SAM OWENS/BLOOMBERG (3)

Ratliff

Justice

In the past year he's gone from knowing "absolutely zero about computer code" to being a professional programmer. "A lot of people look at us coal miners as uneducated," says Ratliff, a 38-year-old with a thin goatee and thick arms. "It's backbreaking work, but there's engineers and very sophisticated equipment. You work hard and efficiently. And that translates right into coding."

Ratliff works for **Bit Source**, a startup in his hometown of Pikeville that builds websites and apps for clients in the area. The company is out to prove that in the hills there can be life after coal. Thousands of local workers are among the 26,000 Americans left unemployed as coal prices fell 75 percent over five years. About 1,000 people applied for Bit Source's first 10 coding jobs, says co-founder Rusty Justice. All have mining backgrounds. "We've got a lot of high-skilled hillbillies here," he says.

Few places are as steeped in coal as Pikeville, a town of 6,900 wedged into a narrow slice of the Big Sandy Valley. Over the years, surrounding Pike County has set state records for millions of tons dug. Since the coal slump, its output has fallen below 7 million tons, a fifth of its peak, and mining jobs have dropped by two-thirds, to fewer than 1,300.

Justice, a fourth-generation Pikeville native, felt the pinch. His excavation and engineering company, Jigsaw Enterprises, lost 70 percent of its customers as big miners such as James River Coal, Alpha Natural Resources, and Arch Coal filed for bankruptcy protection. Justice began looking to diversify.

In 2014 he and business partner M. Lynn Parrish set up Bit Source in an old brick Coca-Cola bottling plant on Pikeville's northern edge. Last winter they began their recruiting drive, airing radio ads and posting fliers seeking unemployed coal workers interested in becoming programmers. Starting salaries for coders living three hours west of Pikeville in the "Golden Triangle" of Louisville, Cincinnati, and Lexington top out at about $70,000—comparable to miners' wages. Justice says he figured the transition would be easy enough. "Daggone," he says. "These are high-tech workers that just get dirty."

Ratliff, who spent years in the mines calculating particle velocities and explosion densities, says that background helped him pass Bit Source's interviews and tests. Last March he joined the nine other new hires, who'd driven underground shuttle cars or sold heavy mining machinery.

A $154,000 grant Bit Source got from a regional jobs program paid their salaries during five months of training while they learned HTML, JavaScript, and PHP. Since then they've completed nine projects, including the website for eastern Kentucky's career center network. While federal funds are still covering a share of Bit Source's payroll through the winter, Justice says he expects to turn a profit this year.

Bit Source is an outlier—Big Sandy Valley isn't Silicon Valley. Kentucky has the slowest Internet speeds in the U.S., according to a survey by Akamai

Technologies. Almost a quarter of the state's rural populace has no broadband option. KentuckyWired, a $324 million public-private partnership, is supposed to lay 3,400 miles of fiber-optic cable across Appalachia and the rest of the state by 2018, but the project is already facing a financial shortfall.

Slow change is still change, Ratliff says. During the five months he was out of work, starting in late 2014, he traveled as far as Wyoming looking for a job before deciding he had to return to his three teenage kids. At Bit Source, he's making half what he made in the mines, but prospects are bright enough that he turned down an offer to return to coal. Ratliff followed his dad into the mines when he was just a few years older than his oldest child is now. Recently, he sat down with the kids to suggest they become programmers. "The coal industry is dying here," he says. "But we could be the grass roots of something truly special." —*Tim Loh*

The bottom line A coal-industry excavator has trained out-of-work mining experts as coders and says the company he co-founded is nearing a profit.

Earnings

For Analysts, Loving LinkedIn Was Wrong

▶ **The company's stock rout prompts a rare collective "oops"**

▶ **"LinkedIn seemed to have the secret sauce"**

It's not often Wall Street says "I'm sorry." But after **LinkedIn** reported its earnings on Feb. 4, about a dozen financial analysts with varying strategies and sensibilities issued mea culpas. Some had rated LinkedIn a buy a few hours before its downgraded forecast. They watched in horror as its stock fell more than 40 percent, bottoming out below $104 on Feb. 5. Some put it more simply than others. "We were wrong," SunTrust Robinson Humphrey analyst Bob Peck wrote in a Feb. 5 note downgrading the stock to "neutral." (He'd praised LinkedIn's ▶

◀ odds of continued progress two weeks earlier.) Mizuho Securities lamented the company's "significantly slower" growth prospects, while James Cakmak at Monness Crespi Hardt said he was no longer sure even LinkedIn's slower growth would be sustainable.

LinkedIn took a beating even though its earnings report was consistent with recent performance. As usual, it beat earnings expectations, then issued a lower-than-expected sales forecast for the year. It delivered a similarly disappointing projection in last year's second quarter, at which point its stock dipped 19 percent. But now Wall Street is more skeptical of the tech stocks it once assumed would grow forever.

Until Feb. 5, LinkedIn looked like an ideal tech stock to own, almost like a combination of Facebook and Salesforce.com. A free network for professionals, it has the ingredients to grow virally, like a social media company. It sells services to recruiters, salespeople, and marketers, giving it several ways to snag recurring revenue. "This was considered one of the preeminent names, like Facebook and Google," says Peck.

With the Nasdaq down 14 percent and the overall market down 8 percent since Jan. 1, it's time to be careful, says Jason Lemkin, an investor who runs SaaStr, a site that advises software companies. "LinkedIn seemed to have the secret sauce, and everyone predicted infinite growth," he says. Now reality is setting in, and to expand, LinkedIn has to do more difficult and expensive things, like developing and selling more product lines. "When companies hit these growth walls, people just react really strongly," says Lemkin.

Walls are springing up all over. On its earnings call, LinkedIn announced it had shut down Sales Accelerator, a software tool designed to connect businesses with potential customers, because of a lack of interest. Analysts had said the feature would be worth millions. LinkedIn's overall user growth slowed, it got tougher to hold on to paid users, and the company had to lean harder on its sales staff. Small factors added up, and analysts were "blindsided," says Monness Crespi's Cakmak.

Anand Sanwal, co-founder of researcher CB Insights, questions whether the analysts who blew their LinkedIn predictions are worth listening to, given the current industry upheaval. "Equity research analysts are in that camp of guessing and sounding impressive, but also working with these models that are relatively shaky," he says. "They work well when things are slow and steady but don't work well when people are thrown a curveball."

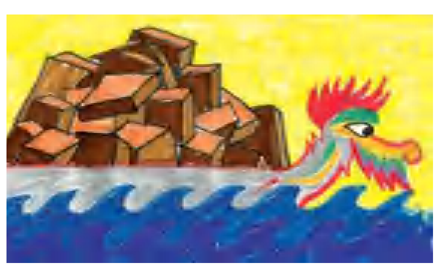
"When companies hit these growth walls, people just react really strongly." —*Jason Lemkin, SaaStr*

LinkedIn is unlikely to be the last company hit by a pitch, says Sanwal. Investors in private companies often base their valuations on publicly traded stocks like LinkedIn. With even **Apple** and **Amazon.com** being punished mightily for their recent quarterly disappointments, companies in the spotlight can't afford many missteps, says SunTrust's Peck. As for his own line of work, he says: "At the end of the day analysts need to rely on their research, not what the company says." —*Sarah Frier*

The bottom line LinkedIn watchers felt compelled to apologize after shares dropped 40 percent following a diminished earnings forecast.

E-Commerce

Amazon's Plan to Take On UPS and Alibaba



▶ **Company documents describe a global delivery network**

▶ **Amazon takes "baby steps along a long path"**

Amazon takes aim at another piece of a global e-commerce market set to top $1 trillion by 2020

In recent weeks, speculation has mounted that **Amazon.com** plans to start a global delivery operation meant to compete with **UPS** and **FedEx**. Asked on a Jan. 28 earnings call about reports that Amazon has leased planes and registered an ocean freight business, Chief Financial Officer Brian Olsavsky said the idea was just to supplement the other companies during peak delivery seasons, not replace them.

Internal Amazon documents reveal a far bolder plan. A 2013 report to senior management proposed an aggressive global expansion of the Fulfillment by Amazon (FBA) service, which provides storage, packing, and shipping for independent merchants selling products through Amazon.com. The report envisions a global delivery network that controls the flow of goods from factories in China and India to customer doorsteps in Atlanta, New York, and London. The project, called Dragon Boat, is proceeding apace, according to a person familiar with the proposal. The company declined to comment for this story.

The strategy would pit Amazon more directly against FedEx and UPS, as well as Chinese e-commerce leader **Alibaba**. Like Amazon, Alibaba is vying for dominance of international e-commerce. That market will top $1 trillion and 900 million shoppers by 2020, according to a June report from Accenture and AliResearch, Alibaba's research arm.

As soon as this year, Amazon plans to start a venture called Global Supply Chain by Amazon, the documents say. The intention is that Amazon will put itself at the center of a logistics industry that involves shippers such as FedEx and UPS as well as legions of middlemen who handle transnational cargo and paperwork. By bypassing these brokers, Amazon can gather inventory from thousands of merchants around the world and buy space on trucks, planes, and ships at reduced rates.

Merchants will be able to claim cargo space online with a single click. Amazon will join with third-party carriers to build the global enterprise and then gradually squeeze them out once the business reaches sufficient volume and Amazon learns enough to run it on its own, according to the proposal. Financial services could follow, with Amazon giving loans to merchants,

FROM LEFT: ILLUSTRATION BY 731; COURTESY VOCALID

processing international payments, and consulting its network of sellers on customs and tax matters.

The strategy echoes Amazon's move into cloud services, now its fastest-growing and most profitable division. Amazon never made big proclamations about its cloud operations in the early days, instead marketing directly to software developers. Companies like **Hewlett-Packard**, **Dell**, and **Microsoft** largely ignored the threat and have been stuck playing catch-up.

"This is classic Amazon fashion," says Colin Sebastian, an analyst at financial-services firm Robert W. Baird, who says the company's logistics operation could become a $400 billion business. "They take baby steps along a long path, which allows some companies that could be disrupted to remain in a sense of denial. Amazon rarely takes one big step forward that shocks the market."

Amazon laid out its logistics strategy in 2013 after predicting an uptick in the flow of merchandise from its sellers in one country to buyers in another. Access to online shoppers in the U.S. and Europe is its draw for merchants in China and India, and operation Dragon Boat helps close the distance. In the proposal, Amazon said the new logistics business would open cross-border commerce to smaller merchants who otherwise wouldn't bother trying. That in turn would make many more products available to Amazon shoppers around the world.

Three years after the proposal, there are signs the plan is nearing fruition. In January, San Francisco logistics company Flexport noted in a blog post that Amazon's Chinese subsidiary has registered in the U.S. to provide ocean freight services to other companies. A month earlier, Amazon considered leasing 20 Boeing 767 freighter jets to control more of its delivery costs, says a person familiar with the plans. "What's clear," says Jordy Leiser, chief executive officer of e-commerce analyst StellaService, "is that Amazon wants to capitalize on its advantage." —*Spencer Soper*

The bottom line Amazon's moves into the delivery business suggest that it's hewing to a 2013 plan to take direct control of its global shipping.

Innovation

Virtual Voices

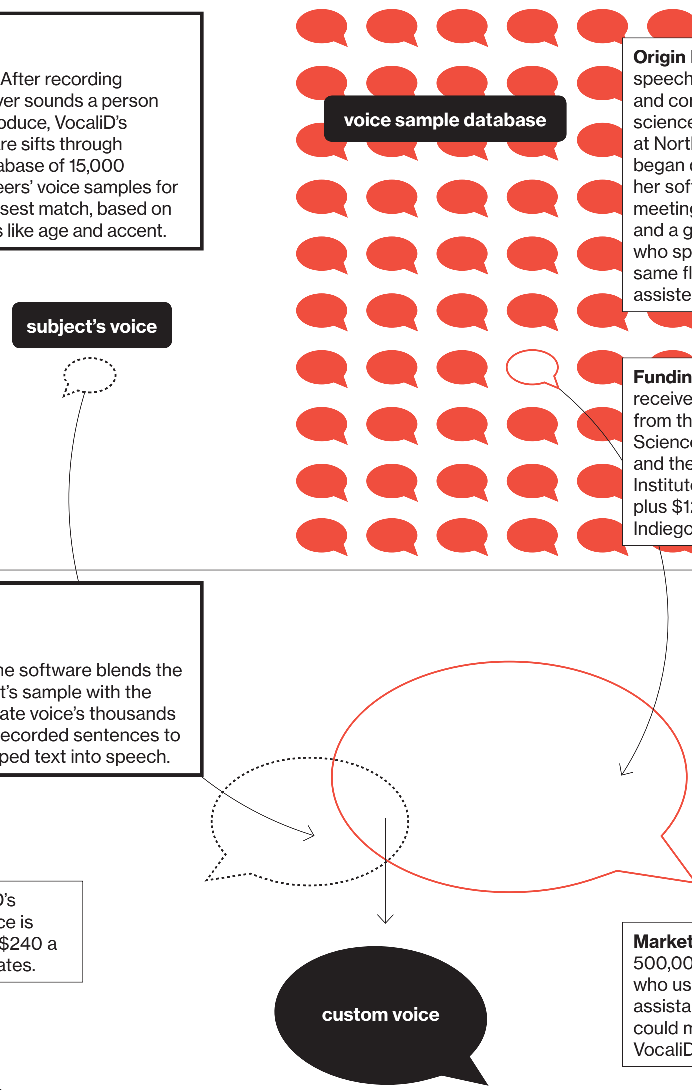
Form and function
For people rendered unable to speak by cerebral palsy, stroke, or traumatic brain injury, VocaliD's software creates custom speech patterns that sound like the original person's voice.

Innovator Rupal Patel
Age 43
Founder and president of VocaliD, a synthetic-voice startup with three full-time employees in Belmont, Mass.

1.
Setup After recording whatever sounds a person can produce, VocaliD's software sifts through its database of 15,000 volunteers' voice samples for the closest match, based on factors like age and accent.

Origin Patel, a speech pathology and computer science professor at Northeastern, began developing her software after meeting a little girl and a grown man who spoke in the same flat, computer-assisted voice.

Funding VocaliD has received $365,000 from the National Science Foundation and the National Institutes of Health, plus $128,000 on Indiegogo.



2.
Use The software blends the subject's sample with the surrogate voice's thousands of prerecorded sentences to turn typed text into speech.

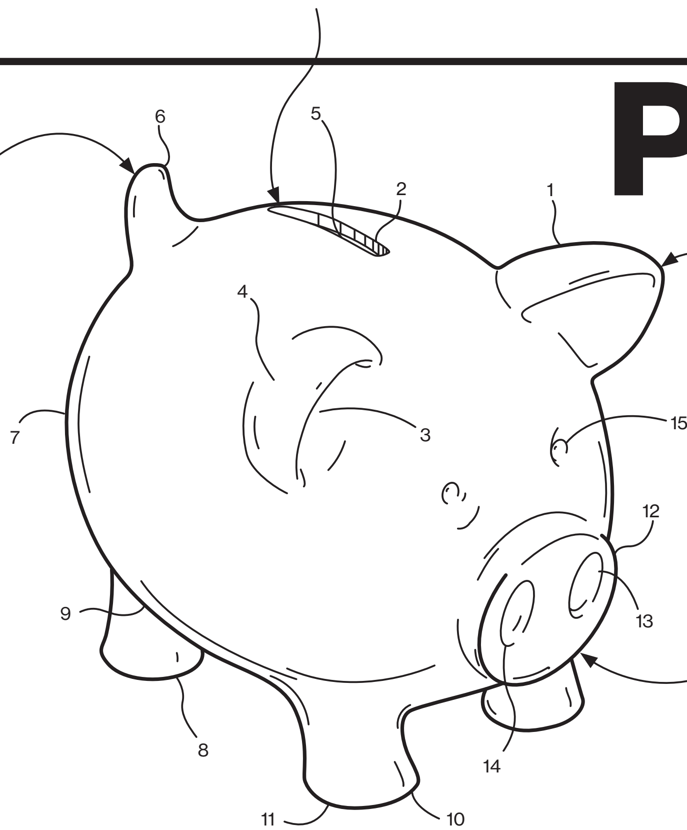
Cost VocaliD's standard price is $1,250, plus $240 a year for updates.

Market About 500,000 Americans who use computer assistance to speak could make use of VocaliD, says Patel.

Next Steps

The first seven of VocaliD's initial 60 subjects received their custom voices in December, and the software is slated for wider release online by yearend. Patel is seeking $1 million to further automate the voice-building process. "Cost and whether insurance is going to cover it will be the big thing," says Lisa Schoenbrodt, who chairs the speech science department at Loyola University Maryland. Patel says she's working on bringing the price down to below $1,000, and on pitches to robotics and gaming companies. —*Olga Kharif*

Can You Patent This?



▶ **Banks race to beat the patent trolls—and Silicon Valley**

▶ **“If we don’t protect our innovations...we’re going to be left behind”**

Banks and Silicon Valley are on a collision course, the future of finance may be at stake, and one side is brandishing its most dreaded weapon: the PowerPoint presentation.

In January dozens of government patent examiners gathered in a suburban Washington lecture hall to listen to **Bank of America** employees go through a slideshow. Hundreds more tuned in for a webcast. The presentation detailed 25 ways banks digitally authenticate such things as a customer depositing checks. It may sound agonizingly technical, but for banks, documenting every detail of what they do has become critical. As Silicon Valley entrepreneurs dream up ways to disrupt the financial-services business, bankers and Wall Street companies are taking patents very seriously.

“There is so much innovation in finance right now that if you want to stay ahead and maintain an edge, you have to patent it,” says Linda Coven, a banking and payments analyst at research firm Aite Group.

The biggest U.S. banks, including Bank of America, and payments networks such as **MasterCard** are applying for more patents than ever before on everything from mobile wallets to blockchain ledgers similar to those used for the digital currency bitcoin. Banks and payments companies were awarded 1,192 patents over the past three years, 36 percent more than the prior three-year period, according to researcher Envision IP.

They’re also hosting seminars for the U.S. patent office to head off what the industry sees as bad patents that cover age-old banking practices. By showing the examiners how the industry already operates, the banks hope the office won’t grant patents to applicants with similar ideas.

Tech companies from Apple to Google have for years fought patent wars over smartphone features, search technology, and computer chips. Banks largely ignored the patent office and gained a reputation for keeping their internal processes to themselves.

That secrecy has become a problem. In 2011 the nation’s banks and stock exchanges were sued by an independent patent owner over the way they encode and transmit data related to billions of transactions every day. Banks spent millions of dollars to successfully fight the claim.

After a few dozen suits like that, banks decided they needed to intervene before patents were issued. “There was this frustration of ‘Why is that patent out there?’ ” says Sean Reilly, general counsel of Askeladden, a group set up to address patent issues by the **Clearing House**, a payments company owned by the biggest U.S. banks. Bank of America and **JPMorgan Chase** are among the companies scouring old computer files and boxes of documents to create a database that shows the

ILLUSTRATION BY 731

evolution of modern banking practices.

A 2014 U.S. Supreme Court ruling found that automating a concept or practice wasn't enough to win a patent. But the focus on claiming intellectual property isn't only about fighting lawsuits over existing processes. Banks also want to beat back competitors as they and tech-driven startups experiment with ways to lend, make trades, and conduct mobile banking.

"It's all stemming from the fact that banks are no longer your standard brick-and-mortar company that holds your money," says Binal Patel, a patent lawyer at Banner & Witcoff. "They're touching pretty much anything that Silicon Valley seems to be touching."

Banks often team up with tech companies—JPMorgan did a deal with online lender **On Deck Capital** to offer small-business loans—but they know today's ally may be tomorrow's rival. "There's certainly the suggestion that, 'If we don't protect our innovations like the Silicon Valley innovations, we're going to be left behind, and they're going to take over our industry,'" says Jeff Berkowitz, a patent lawyer with the firm Finnegan.

Bank of America has won the most patents among U.S. banks in recent years, with an active portfolio of more than 3,000. These include patents covering blockchains, a wearable financial indicator such as a watch, and automated teller machines that can be operated by a smartphone. MasterCard applied for 500 last year, 10 times the number in 2010, according to Colm Dobbyn, head of the company's patent program.

The patent office welcomes the attention. The Bank of America seminar was part of the agency's effort to provide more technical training for examiners. Bristol-Myers Squibb, Google, and Tesla have also held sessions for patent office workers.

Until a 1998 court ruling opened the door to more business-method and software patents, most finance patents weren't allowed. Once they were, the patent office still didn't have access to information on how financial companies operated. Sometimes the companies themselves struggled to document the things they had already been doing before a patent applicant came along.

Michael Zoppo, a patent lawyer with Fish & Richardson, recalls a case over an automated version of something trading-pit workers had been doing for years. "Nobody writes that down," he says. "They talk about it over drinks. It's a cultural issue with the industry." —*Susan Decker and Elizabeth Dexheimer*

The bottom line Wall Street and Silicon Valley are increasingly in the same businesses, and that's driven a big increase in bank patents.

Debt

Deutsche Bank Investors Get a Scare

▶ **An odd kind of bank bond called a CoCo starts to look shaky**

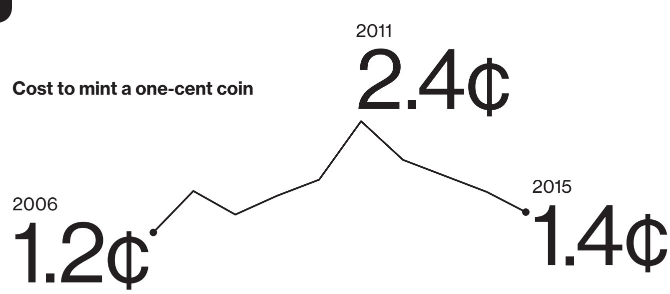
▶ **It's an instrument "of regulators, by regulators, and for regulators"**

Shares in **Deutsche Bank** tumbled on Feb. 9 to their lowest point since 1992. The biggest thing driving investors' pessimism: a report from independent research firm CreditSights that said the Frankfurt-based bank might struggle to make its payments next year on contingent convertible bonds, also known as CoCos. Deutsche Bank took the unusual step of saying that it can make payments on the bonds for the next two years, and its shares rallied 4.6 percent on Feb. 10 on reports it might buy back some debt.

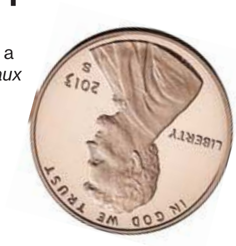
The shake-up put a spotlight on CoCos, which are no ordinary bonds. Until recently, the instruments mainly issued by European banks were the best bet on the global credit markets, generating returns of 8 percent in 2015, according to Bank of America Merrill Lynch index data. Their yields average a fat 7 percent when short-term rates in Europe are negative. But that's a reward for risk: The bonds allow banks to skip interest payments without defaulting or even convert the bonds into equity in times of financial stress—bad news for investors who had planned to collect their interest and principal.

Now bond markets are paying attention to the downside. In less than six weeks this year, CoCo prices have dropped far enough to wipe out the 2015 gains. European banks are looking much less solid since their previous earnings reports. Deutsche Bank last month posted its first full-year loss since 2008. **Credit Suisse Group**—which hasn't been the focus of the same debt worries—in February reported its biggest quarterly loss since the financial crisis. Investment banking revenue in Europe is shrinking, even as tumbling oil prices, China's slowdown, and a global market rout are making the banks' loans and investments look riskier. ▶

The Penny Premium



Pennies have long cost more to make than they're worth. Plunging zinc prices, a result of lower demand from China, have cut the U.S. Mint a break. —*Joe Deaux*



◀ "The worries about these bonds represent real fears that the European banking system may be weaker and more vulnerable to slowing growth than a lot of people originally thought," says Gary Herbert, a fund manager at Brandywine Global Investment Management. "It's the epicenter of growth concerns globally. And it doesn't look pretty."

As risky as CoCo bonds are for their investors, they were designed to make the banks safer—or at least less likely to need a government bailout. Because the banks aren't obligated to make payments in a time of crisis, selling CoCos lets them raise money without increasing their ultimate risk of insolvency, at least the way regulators look at it. As a result, many CoCos have helped banks meet new, higher capital requirements.

Critics of the bonds say they are too complex and banks are too opaque. "Basically you have the upside of fixed income and the downside of equity," says Gildas Surry, a portfolio manager at Axiom Alternative Investments. He calls the bonds "instruments of regulators, by regulators, and for regulators."

Investors aren't concerned only about missed interest payments. The bonds can typically be bought back by the bank after five years, but this isn't required. Rising borrowing costs may make banks less likely to redeem, forcing investors to hold the bonds longer than they might have expected.

Banks have issued about €91 billion ($103 billion) of CoCos that regulators count as top-tier capital. They are relatively untested, and if a troubled bank fails to redeem them or halts payments, investors may jump ship quickly, potentially sparking a wider selloff in corporate credit markets.

For now, money markets show little sign of systemic debt concerns. One key indicator of fear is the two-year euro interest rate swap spread—the difference between what banks and governments must pay to borrow. The gap was 0.35 of a percentage point on Feb. 8, less than the five-year average of 0.49 of a point. The spread hit 1.26 points during the financial crisis.

That's not reassuring CoCo investors. "In a normal market, this would be a great time to buy, but everyone is afraid to step in," says Tom Voorhees, a bond trader at Brean Capital. "Everyone is looking for the door at the same time."
—*Tom Beardsworth and Cordell Eddings*

The bottom line CoCo bonds are meant to be safe for the bank that issues them but risky for investors who buy them. The risk is now clear.

A High-Risk Bond

Change in value of CoCos for 2016 through Feb. 8

Deutsche Bank	-17%
UniCredit	-15%
Banco Popular Español	-14%
Banco do Brasil	-12%
BBVA	-8%

Central Banks

Speculators Fight 'Big Mama' Over the Yuan

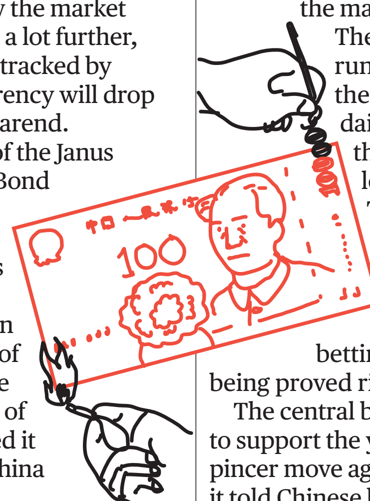
▶ **The People's Bank of China flexes its muscle in the currency market**

▶ **"They wanted to say, 'Who's the boss here?'"**

Currency speculators are piling on bets that the Chinese yuan will weaken. And a bruising battle in January with the People's Bank of China, the country's central bank, hasn't deterred them.

Among the recent bears are big hedge fund managers including Bill Ackman of **Pershing Square Capital Management** and Kyle Bass of **Hayman Capital Management**. Prices for options trades show the market expects the yuan to fall a lot further, and 39 of 45 strategists tracked by Bloomberg say the currency will drop against the dollar by yearend.

Bill Gross, manager of the Janus Global Unconstrained Bond Fund, has compared the yuan trade to investor George Soros's campaign against the British pound in 1992. In that episode, the Bank of England ultimately gave up defending the value of its currency and allowed it to fall. Soros is now a China bear, too.



The PBOC—sometimes called Yang Ma, loosely translated as "Big Mama"—seems determined to show that it will hang tough. In mid-January, it launched a two-day attack to prop up the yuan and force losses on speculators. "They wanted to say, 'Who's the boss here?'" said Frederic Neumann, co-head of Asian economics research at HSBC Holdings.

Chinese officials are using military analogies to describe the central bank's actions. Wang Yong, an academic at the PBOC's training school, urged policymakers to gird for a "tough battle" and for the government to stock up on grain, oil, and gold.

The bank, which closely manages the yuan's value against foreign currencies, hasn't been dead-set against letting the currency fall. It shocked markets in August with a surprise devaluation and with another markdown in January. With growth in the country slowing, a cheaper yuan can even be helpful because it boosts exports by making them cheaper. But a fast, volatile devaluation could exacerbate the recent flight of capital out of the country. And there's the matter of control: The bank doesn't want to cede power over the currency to speculators.

The PBOC can sell yuan when it wants it to fall, or use a portion of its more than $3 trillion in foreign currency reserves to buy yuan when it wants it to rise. As 2016 began, the PBOC asked Chinese banks and state-owned companies in Hong Kong to provide details on who was placing orders to short the yuan—that is, bet on it falling. It was part of a plan to discourage speculators, according to people familiar with the matter.

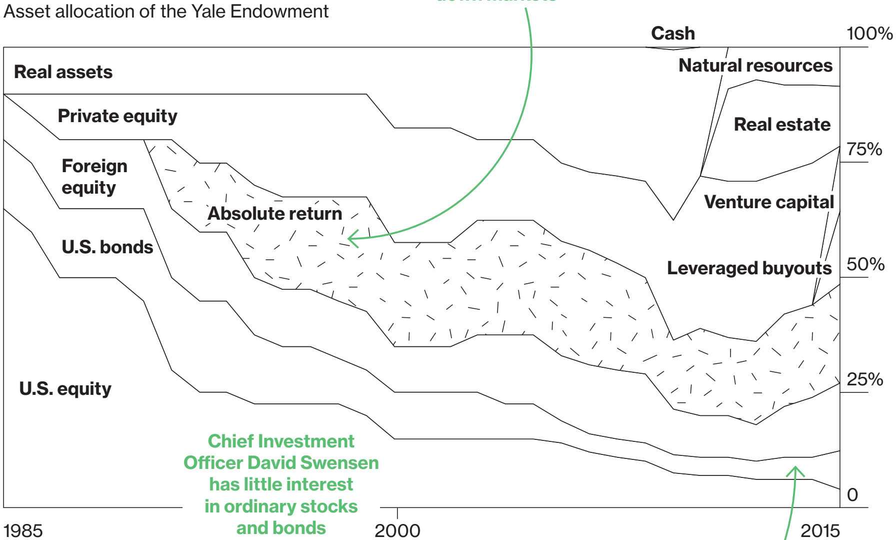
The strategy didn't always run smoothly. On Jan. 6 the PBOC set the yuan's daily target rate against the dollar at the weakest level since April 2011. The currency tumbled in Hong Kong, where it trades more freely than on the mainland, and those who'd been betting against the yuan were being proved right.

The central bank stepped back in to support the yuan and then made a pincer move against the shorts. First, it told Chinese banks to limit offshore loans in yuan, making the currency harder to get and to short. Then the PBOC went in hard, buying enough yuan in Hong Kong to spark a record

COCO DATA COMPILED BY BLOOMBERG; ILLUSTRATION BY 731

Yale Does Not Invest Like You

Asset allocation of the Yale Endowment



DATA COMPILED BY BLOOMBERG, YALE, NACUBO-COMMONFUND STUDY

Assets in 2015 totaled

$25.6b

and the fund returned

+11.5%

in the year ending June 30, 2015, vs. 7.4% for the S&P 500

Small schools have not fared as well by following Yale's lead; endowments of less than $25 million lost 0.5% on hedge funds for the year as of June 30

surge in the city's money-market rates.

"The market went into panic mode," says Ryan Lam, head of research at Shanghai Commercial Bank. On Jan. 12 the interest rate to borrow yuan spiked overnight to almost 67 percent, almost five times the previous high. (It has since settled back to 1.2 percent.)

Action was accompanied by jawboning. In New York on Jan. 11, Han Jun, the deputy director of China's office of the central leading group for financial and economic affairs, told reporters that bets against the yuan would fail. "It is pure imagination that the Chinese yuan will act like a wild horse without any rein," he said.

Inside the PBOC, officials view the January campaign as a success and vow to do it again if needed, according to people familiar with the matter. And not everyone in the market is bearish on the yuan. The flip side of a weak yuan is a strong dollar, which has been buoyed by U.S. economic strength. Jason Schenker of Austin-based Prestige Economics says that could soon change. "The odds that the Chinese economy will improve before the U.S. does are pretty high," he says.

Defending the currency has costs: China's reserves, once a continuously rising hoard, fell by almost $100 billion in January. Some argue the PBOC's approach runs counter to the government's aim of making the yuan a global currency. "Investors may read these actions as an indication of despair, that the situation may be worse than what appears on the surface," says Alicia García Herrero, an economist at Natixis in Hong Kong. —*Bloomberg News*

The bottom line The PBOC won a skirmish against currency speculators in January but may have to settle in for a long fight.

"It is pure imagination that the Chinese yuan will act like a wild horse without any rein." —*Han Jun*

Investing

The Low-Profile Fund That's Won Big for Yale

▶ **Bracebridge Capital is the biggest hedge fund run by a woman**

▶ **"The bonds don't know who owns them"**

Last year was a tough one for hedge fund managers, but the Yale Endowment's bet on one little-known Boston fund has continued to pay off.

Nancy Zimmerman's **Bracebridge Capital** has gone from $5.8 billion in assets four years ago to $10.3 billion. That makes it the largest hedge fund in the world run by a woman. Despite this, Zimmerman, who survived a 1990s scandal involving Russia, her husband, and Harvard, has largely avoided the limelight.

Bracebridge was staked with $50 million in 1994 by David Swensen, who runs the Yale Endowment, and Thomas Steyer, founder of **Farallon Capital Management**. It has returned about 10 percent annualized since its inception and has been one of Yale's most profitable investments. It represents $1 billion of the endowment's $25.6 billion in assets.

Swensen, one of the most successful and closely watched endowment managers, has over the years moved away from investing directly in stocks and bonds. At the same time, he's added to hedge funds and so-called absolute return strategies. Such investments are ideally supposed to move independently of the ups and downs of the broader market, with more of the return depending on the skill of the manager executing them. They can be opaque to outsiders. Here's how Swensen describes Zimmerman's approach: "She's employing this leveraged strategy to exploit pricing differentials in the fixed-income world with an obsessive focus on risk."

Zimmerman herself offers an example of what this means in practice. Bracebridge will buy a corporate bond it considers to be underpriced, while at the same time purchasing a credit default swap, a kind of insurance policy on the bond. The fund makes money on the difference between what it earns from the bond and what it pays for the insurance. It might do the reverse as well and bet against a bond that seems ▶

expensive. Leverage boosts returns when its bets make money, but can also magnify losses.

Since 2009, Bracebridge has had only eight losing months. The fund gained just 2 percent in 2015, but that performance eclipsed the industry, which was up 0.6 percent on average, according to data compiled by Bloomberg. Hedge funds had trouble navigating unexpected events, including a devaluation in the Chinese currency in August, a rally in European government bonds, and a steep drop in oil prices. "There were a lot of gopher holes that you could step in," says Gabriel Sunshine, Zimmerman's partner at Bracebridge. "We managed to miss most of them."

Nancy Zimmerman

Education Brown

Job history O'Connor & Associates, Goldman Sachs

Assets $10b

Specialty Making leveraged bets in the fixed-income market

Bracebridge's biggest win came in 2009: After losing 18 percent in the financial crisis, it posted a 35 percent gain. That surpassed the 25.8 percent return on its nearest benchmark, the HFRI Relative Value index.

The fund's strategy doesn't always work so well. Long-Term Capital Management, a highly leveraged hedge fund run by John Meriwether, had an approach similar to Bracebridge's. In 1998, after Russia stiffed lenders including LTCM, that fund failed and was bailed out by its Wall Street competitors. The fall of LTCM hit other hedge funds including Bracebridge, which held some of the same assets. Bracebridge lost about 26 percent for the year.

Investments in Russia cast another kind of shadow over Zimmerman's early career. A few years before LTCM's fall, in 1992, her husband, Harvard economist Andrei Shleifer, signed on to help privatize the Russian economy under the auspices of the university and the U.S. government. Zimmerman bought up beleaguered Russian debt, betting its value would rise, court filings show.

Complaints arose about Shleifer and his business partner allegedly using their position and influence for personal gain, according to court documents. Harvard, Shleifer, and the U.S. Department of Justice eventually reached an agreement in which the university paid $26.5 million to settle a lawsuit and Shleifer paid $2 million. Zimmerman's company paid $1.5 million to resolve civil claims that it improperly used resources and staff from the government-funded project. Neither Zimmerman nor her husband admitted wrongdoing in connection with their Russia dealings.

Steyer of Farallon cashed out after the Russia episode, but Swensen stuck with Zimmerman's fledgling fund. "We took a hard look and found no reason to modify our relationship," says Swensen, who describes himself as a close friend of Zimmerman's.

Zimmerman, 52, was born and raised just north of Chicago in Skokie, Ill., the youngest of two girls. While attending Brown, she worked summers at a Chicago derivatives trading firm, where she stayed for three years after graduating. Her first job there was buying Japanese yen options. She owns most of Bracebridge, according to a 2015 filing with the U.S. Securities and Exchange Commission.

Zimmerman plays down the challenges faced by women in a male-dominated industry: "The bonds don't know who owns them." —*Sabrina Willmer and Tom Moroney*

The bottom line One of Yale's most successful investments has been a hedge fund making complex leveraged bets on bonds.

Foreign Exchange

Automation Claims More Victims

▶ **Currency traders are losing jobs as algorithms take over**

▶ **"This is crunch time—it's not looking good"**

Charlie Stenger, a currency broker-turned-recruiter, has seen it all. One dismissed trader wept in his office. Another said he hadn't told his wife he was unemployed and left the house every day in a suit to sneak off to a coffee shop. Then there are the delusional ones who carefully explain how they're not interested in jobs that don't pay as well as those they just lost. Stenger, who was laid off from broker **ICAP** in 2013 and works for executive search firm Sheffield Haworth, tells the men and women he counsels: Take the pay cut. Oh, and don't wait for the phone to ring. "This is crunch time–it's not looking good," he says. "This is a shrinking pond."

"There were periods where I wouldn't make money for 90 days at a time, and the insurance bill was still due every month, and the rent and the car payments." —*Charlie Stenger*

The investment banking business has shed tens of thousands of positions since the end of the financial crisis, and the downsizing has been hard on foreign exchange desks at many banks, including **Barclays**, **Morgan Stanley**, and **Société Générale**. The industry-wide job axing coincided with a shift to automation, which slashed staffing needs and produced a new smaller generation of quantitative traders whose decisions are driven by mathematical models.

45%

Decline in revenue from foreign exchange divisions from 2009 to 2014

There were 2,300 people working on currency trading jobs at the world's biggest banks in 2014, a 23 percent drop from four years earlier, according to Coalition Development, an analytics firm. Revenue from foreign exchange divisions hasn't bounced back after falling to $6.5 billion in 2014, down almost 45 percent from 2009, Coalition data show. Currency trading in the U.K. and North America shrank by more than 20 percent in October from a year earlier, according to central banks in those regions.

Humans are up against formidable opponents across the industry, such as **Virtu Financial**. Because its business is built on automation, Virtu had only about 150 employees last year–generating more than $5 million per worker. Its computers can trade more than 11,000 securities and other products on more than 225 trading platforms in 35 countries. "My style of trading went out of vogue," says Keith Underwood, who traded currencies for 25 years before becoming a consultant in 2015. "The business has to be

PHOTOGRAPH COURTESY BROWN UNIVERSITY

downsized." Even if traders recognize that, he adds, it's not easy "for people who have been in a market for many, many years to see that they've been replaced by an algorithm."

From his office at Sheffield Haworth in Chicago, Stenger still advises friends on foreign exchange sales and trading desks. First, prepare to be laid off. When you look for work, plan on taking a 25 percent pay cut. "Your stock goes down once you lose your job, and that's just the nature of the beast," says Stenger, whose clients typically earn salaries of $250,000 to $1 million. Stenger was told he was being let go four days after he learned his wife was pregnant with their first child; he didn't have a regular income for a year. "There were periods where I wouldn't make money for 90 days at a time," he says, "and the insurance bill was still due every month, and the rent and the car payments."

Some dismissed traders have landed work as salespeople or executives at financial technology companies, payment providers, or trading platforms and exchanges. Others use their knowledge to bolster banks' risk-management operations. Franz Gutwenger, a recruiter in New York, says one of his financial institution clients has expanded its regulatory compliance staffing by a factor of five.

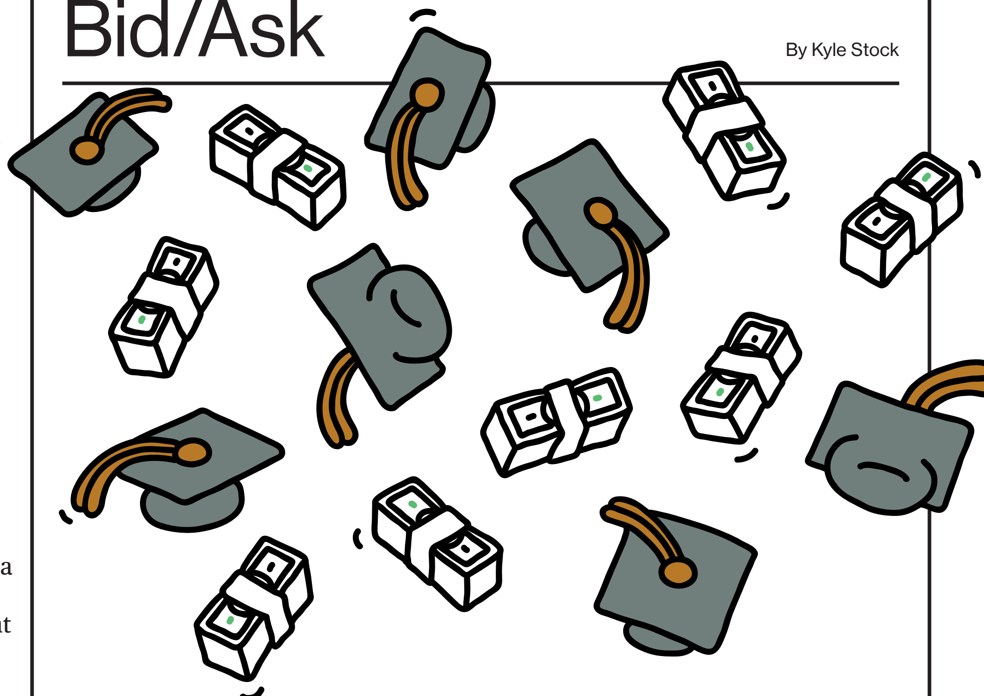
"I don't think there's a whole lot from my generation that are still in the industry," says Guy Piserchia, who led foreign exchange trading desks at **Bank of America** and **Paribas** over a three-decade career. Piserchia left Wall Street in 2012 and got more involved in local politics, serving two terms as mayor of the 8,700-person township of Long Hill, N.J. Now deputy mayor, he'd like to get back to Wall Street in a role that combines his financial and government experience. "With automation and electronic dealing, I think there are going to be fewer people" on foreign exchange desks, he says. "The ones that have evolved and survived may be some of the better ones—or, as in life, may be some of the lucky ones." —*Lananh Nguyen*

The bottom line With volume down and computer use up, there are at least 23 percent fewer people working in currency trading than in 2010.

BID/ASK ILLUSTRATIONS BY OSCAR BOLTON GREEN

Bid/Ask

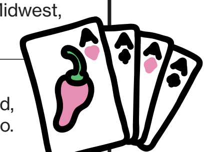
By Kyle Stock



$1.1b

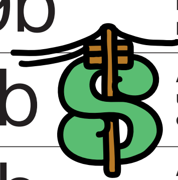
The University of Phoenix goes private. The for-profit school's owner, Apollo Education Group, is being acquired by investors including the unrelated Apollo Global Management and Vistria Group. The school has come under federal scrutiny for its marketing practices and job placement claims, and the price is one-third its market value a year ago. The school hopes to bolster results by expanding abroad.

$6.9b — **Fortis buys ITC Holdings.** The Canadian utility, with 3 million customers, is keen on ITC's large footprint in the U.S. Midwest, including some 16,000 miles of transmission lines.



$3.5b — **A Thai billionaire picks up groceries.** Charoen Sirivadhanabhakdi is buying 59 percent of Big C Thailand, a supermarket chain, from French retailer Groupe Casino.

$2.9b — **SABMiller sheds Peroni and Grolsch.** The sale to Asahi may help resolve antitrust issues in Anheuser-Busch InBev's pending purchase of SABMiller.



$1.5b — **Algonquin buys Empire District.** Algonquin, another Canadian utility buying an American one, will plug in Empire's 218,000 customers in Missouri, Kansas, Oklahoma, and Arkansas.

$1.2b — **A Chinese consortium bids for Opera Software.** The group, including search-engine company Qihoo 360 Technology, likes Opera's mobile browsers.

$910m — **WPX Energy sells its natural gas properties.** The assets in northwestern Colorado will go to Terra Energy Partners, a private company.

$725m — **Stan Kroenke tackles a ranch.** The billionaire owner of NFL's Rams is acquiring a 520,000-acre estate in Texas that's bigger than Los Angeles and New York City combined.

Edited by Pat Regnier
Bloomberg.com

The Lawyer Stays In the Picture

Philippe Dauman won the first round. But the fight for Sumner Redstone's empire is far from over

By Felix Gillette

On the morning of Friday, Jan. 29, Stephen Read, a geriatric psychiatrist, paid a visit to the Beverly Hills mansion of Sumner Redstone, the 92-year-old media mogul. Under a court order, Read had been granted up to one hour to test Redstone's mental competency on behalf of a client, who was suing the billionaire.

Days later, with the results of the psychiatric exam still under seal, Redstone resigned as executive chair of CBS and Viacom, the media conglomerates that he controls through his privately held company, National Amusements. For months, amid conflicting reports about his health, pressure had been mounting for Redstone to step down. The board of directors at CBS seemed well-prepared. On Feb. 3 it elected the company's longtime chief executive officer, Leslie Moonves, to replace Redstone. The vote was unanimous. There was no drama.

At Viacom, on the other hand, things exploded. The news of Redstone's abdication touched off a fierce power struggle, pitting Redstone's daughter, Shari, against Viacom's CEO and—as of Feb. 4—chair, Philippe Dauman. At stake isn't only control of Viacom—a $14 billion corporation that owns MTV, Comedy Central, Nickelodeon, and Paramount Pictures—but also Redstone's legacy, not to mention his sizable personal fortune, valued at more than $5 billion. It promises to be one of the most tangled and protracted succession fights since the Jin dynasty's War of the Eight Princes.

Among the megafauna that roamed the executive suites and boardrooms at media conglomerates in the past half-century, Redstone had few equals. He was a masterful dealmaker, who over a quarter-century pulled off several improbable acquisitions, building a media superpower that spanned broadcasting, cable TV, and movies. He presided over a freewheeling creative environment that routinely cranked out zeitgeist-defining franchises—*SpongeBob SquarePants*, *Beavis and Butt-head*, *The Real World*, *The Daily Show*, *South Park*.

The Redstone succession saga has been unfolding for decades. Questions about his health have come up at least since the 1990s, and his response has always been a variation on how he plans to live forever. This latest, if not final, chapter began on the morning of Nov. 13, 2014, when Redstone joined a routine conference call with the analysts who cover the company. At the start of the proceedings, he wished everyone good morning. His words were faint, slurred, barely audible. He sounded ill.

After the call, word spread among analysts and investors that the end might be near. Viacom and CBS could soon be in play. As the speculation grew, a Viacom spokesperson eventually addressed the issue, telling the *New York Post* in early December 2014 that "Sumner Redstone is as sharp as a tack, and he's looking forward to watching the Patriots beat the Chargers on Sunday."

Redstone, once a common sight at parties and premieres in Hollywood and Manhattan, slipped from public view. In March 2015, for the first time in years, he missed Viacom's annual shareholder meeting. In May he missed CBS's. Concern among investors intensified. While CBS was doing well, Viacom was not. (CBS was spun off from Viacom in 2005.) By the time Viacom presented its fiscal year results in November 2015, it was on the verge of a crisis. Ratings were way down at its major cable networks. Annual revenue dropped 4 percent. Net earnings were down 7 percent, the stock price nearly 44 percent.

When reporters approached the company inquiring about Redstone's health, they were directed to Tom Dooley, chief operating officer and loyal No. 2 to Dauman. In June, Dooley assured a writer from *Vanity Fair* that while Redstone was suffering from a jaw problem, which made speaking difficult, his mind was as crisp as ever. "He's sharp as a tack," said Dooley.

Of all the executives, entertainers, lawyers, toadies, jesters, sirens, and hangers-on who make up Redstone's retinue, no one has remained as close to the throne for as long as Dauman. Through a spokesman, he declined to be interviewed for this article.

When they first met in the 1980s, Dauman, now 61, was a corporate lawyer in New York, and Redstone a movie theater magnate with an appetite for takeovers. The reliable young attorney and the emotionally volcanic client hit it off, developing a father-son-like relationship. As Redstone fought with his biological children and churned through a series of top executives, wives, and girlfriends, Dauman stood by his side. By 1993, Dauman was Viacom's general counsel and had a seat on the board. In 2006, Redstone made him CEO.

It's a lucrative perch. Last year, even as Viacom faltered, Dauman's total annual compensation rose 22 percent, reaching $54 million. He rules over Viacom in a risk-averse style, avoiding the spotlight and keeping the press at arm's length. While many top entertainment executives pride themselves on their creative instincts or their deft management of capricious stars, Dauman's strengths lie elsewhere. In a 2014 interview with *Barron's*, he boasted about his analytic abilities and proficiency with math (he got a perfect SAT score). One of the keys to his success, he said, has been his ability to read his opponents and anticipate their moves. It was a skill he honed playing competitive poker, chess, and backgammon—the latter of which he played professionally after college. "If you are prepared, you know your backup position. You can see many moves ahead, and you can do the give-and-take more effectively," he told *Barron's*. "In a lot of situations, someone is bluffing."

As Viacom struggled, some investors began to clamor for a management shake-up and Dauman's firing. But for anyone to get rid of him, Redstone would have to go first. In the meantime, Dauman and his team kept assuring anybody who asked that Redstone wasn't going anywhere. Sharp as a tack.

Last fall, Redstone signed an "advance health-care directive," naming Dauman as the agent in charge of his medical decisions should he become incapacitated. What might have seemed like a relatively minor change in estate planning has had huge implications. Before Dauman's designation, the role of Redstone's health-care agent belonged to Manuela Herzer. Redstone and Herzer, now 52, dated for a couple of years beginning in 1999. They broke up but eventually reconciled and became close friends. For the last several years, Herzer had lived in Redstone's Beverly Hills mansion, helping look after his medical care and attend to his personal affairs. In October, after an apparent disagreement, Redstone kicked Herzer out of his home and handed official health-care duties to Dauman. Herzer prepared for battle.

On Nov. 25 she filed a lawsuit in Los Angeles County Superior Court, seeking to reverse her removal as Redstone's health-care agent. She alleged that Redstone was incapable of making such a decision because he was no longer of sound mind. She then set out to destroy the notion, coming out of Dauman's camp, that Redstone was mentally fit.

In 2014, according to Herzer's complaint, before Redstone's alarming conference call, he'd been hospitalized several times for pneumonia, resulting in significant respiratory issues. His deteriorating condition, she stated, was further exacerbated by a subsequent breakup with Sydney Holland, his much younger, live-in girlfriend. Herzer alleged that the combination of physical ailments

CORBIS (5); GETTY IMAGES (4); REUTERS (2)

and emotional anguish had left Redstone a shadow of his former self—a "living ghost."

Herzer left little about life inside Redstone's mansion to the imagination. She claimed Redstone was incontinent, had to be carried from room to room, and ate through a feeding tube. As his health declined, he lost interest in his collection of tropical fish. His memory grew faulty. He stopped reading. He was determined to eat steak even though he could no longer chew. He suffered from spontaneous bouts of crying.

> **"The ideal scenario for Dauman and Dooley is that Sumner lives forever … and they keep raking it in"**

Heidi MacKinney, another former lover, provided a declaration for the suit, alleging that for a stretch during the fall of 2015, she'd visit Redstone at his home and have sex with him while a male nurse stood by choreographing the action. "My final two visits were especially troubling," she stated. "I asked Sumner if he wanted to have sex. He made no response to my proposal. This was highly unusual for Sumner. It was as if he did not understand what was happening." Read, the doctor specializing in geriatric psychiatry and working on behalf of Herzer, argued in an additional declaration that complications from pneumonia had likely left Redstone with "impaired brain function." He recommended that the court order a psychiatric evaluation.

Redstone's lawyers responded that the suit was without merit and sought to have it dismissed. They argued in court filings that Herzer was motivated by her "personal financial agenda." They noted that Redstone was receiving the best medical care money could buy and cited an evaluation from his physician, Richard Gold, that Redstone was capable of making his own decisions and that "his spirits were good." In a declaration to the court, Dauman said he'd recently visited Redstone at home twice and found him "as engaged, attentive and opinionated as ever."

Not all Viacom investors were reassured. On Dec. 2, Mario Gabelli, whose investment firm, Gamco Asset Management, holds about 10 percent of Viacom's voting stock, wrote on Twitter that Viacom's directors should inform investors of what they knew about Redstone's condition. In response, William Schwartz, chairman of Viacom's governance and nominating committee, released a statement saying Redstone was "mentally capable."

Shortly thereafter, Dauman appeared onstage at the annual UBS Global Media and Communications Conference in New York. When asked about Redstone's health, Dauman responded that there had been "a lot of misinformation" and "hyperventilation" surrounding the subject. "I talk to Sumner frequently, several times a week," he said. "He has an incredible will to live and an enjoyment of life with some physical disabilities."

On Jan. 19 investor E.F. Greenberg filed a lawsuit in Delaware Chancery Court, accusing Viacom and CBS directors, including Dauman, of wasting resources by paying Redstone millions of dollars a year while knowing he's unable to perform his duties as chairman. The suit demanded repayment and that the companies' directors enact a plan for succession. Viacom responded that the suit was without merit, and CBS declined to comment.

The same day, Eric Jackson, an activist investor with SpringOwl Asset Management, which owns an undisclosed number of Viacom shares, posted a 99-page presentation online, assailing the "lost decade" under Dauman. The takedown was savage. Jackson argued that Dauman had sped up Viacom's "destruction" by heavily licensing its children's programming to Netflix in 2011, training a generation of kids to get their entertainment ad-free from streaming services rather than from Nickelodeon. He knocked Dauman for suing YouTube for copyright infringement in 2007 rather than helping his company master its vast, creative potential. He called Viacom a "creatively bankrupt culture" that had failed to retain top programming executives. At the same time, he knocked Dauman for failing to make any meaningful digital acquisitions, leaving the company vulnerable to the changes sweeping the viewing habits of young people. He called the combined compensation of CEO Dauman and COO Dooley—who together had taken home $432 million over the past five years—"astonishing."

The solution, Jackson argued, was for Redstone and Dauman to step down and for the company to replenish its board. With new management, Viacom could jump-start its creative culture, cut its bloated operating expenses, and explore strategic options. He suggested Viacom should consider selling a piece of Paramount Pictures to Alibaba, the huge Chinese e-commerce company, and look into a potential merger of its assets with AMC Networks.

In the presentation, Jackson included a still from the 1989 comedy *Weekend at Bernie's*, in which two happy-go-lucky numskulls discover that their rich boss has died and proceed to trick everyone into believing that he's still alive while helping themselves to his fortune. In the image, the numskulls sit on beach chairs sipping tropical drinks while holding up the arm of their dead boss, making him wave to the world.

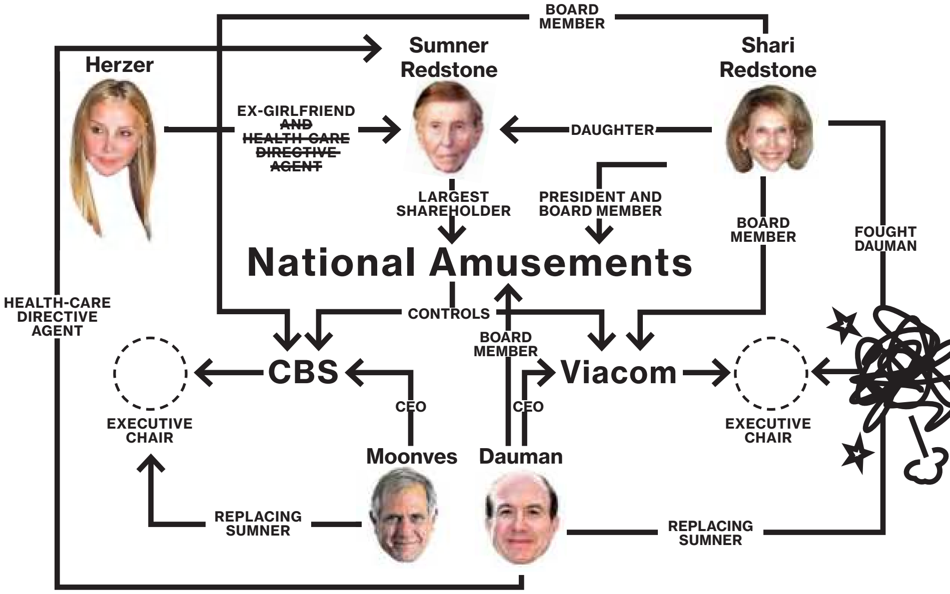
"With Sumner Redstone absent for the last few years, and with Dauman effectively in control of his trust, it's been a perfect setup for Dauman and Dooley to keep paying themselves enormous cash compensation at the expense of shareholders," wrote Jackson. "The ideal scenario for Dauman and Dooley is that Sumner lives forever (as he's promised to do), and they keep raking it in."

Viacom responded in a statement that its board and management team "are completely focused on delivering long-term value to shareholders" and are looking "to the future and the opportunities ahead."

The best hope for investors like Jackson, who are pushing for a total fumigation of Viacom's executive suite, rests with Redstone's 61-year-old daughter, Shari. Over the years, Shari and her father have publicly clashed and reconciled over such an intricate array of grievances that even the most devoted Viacom Kremlinologists struggle to keep track. Redstone has an actual son, Brent, 65. In 2006 he sued Sumner and Shari. That ended with National Amusements buying out his stake in the company.

Despite the family turbulence, Shari has maneuvered herself into a powerful position within the Redstone empire. She's the president of National Amusements, the private theater-chain business that holds controlling stakes in Viacom and CBS; she's a member of its board; and she owns 20 percent of the company (her father owns the rest). She serves as the vice chair on the boards of Viacom and CBS. She will serve as one of seven members of an irrevocable trust that eventually will oversee her father's 80 percent stake in National Amusements. Dauman will also serve on the trust, as will four other lawyers with ties to the family.

Redstone's daughter and his corporate surrogate son are similar in other ways. Like Dauman, Shari is a lawyer who avoids the limelight. They're the same age, share the same guarded temperament, and can often seem more passionate about high-level corporate strategy than the minutiae of day-to-day operations. In addition to serving as president of National Amusements, Shari runs Advancit Capital,



a venture fund that invests in early-stage technology, media, and entertainment startups. Dauman, too, has dabbled in media and telecommunications investing.

Lately there had been hints that Shari was losing patience with Dauman. "I know how respectful she is to Les in particular," her friend James Packer, the Australian casino billionaire, told Bloomberg News last summer. "Philippe with Viacom is going through some issues."

On Wednesday, Feb. 3, Shari released a brief statement. "It is my firm belief," she wrote, "that whoever may succeed my father as Chair at each company should be someone who is not a Trustee of my father's trust or otherwise intertwined in Redstone family matters, but rather a leader with an independent voice." It wasn't hard to decode: Shari wanted to block Dauman's ascension.

The following morning, Viacom's board met via conference call to decide who would replace Sumner as chair. They voted 10 to 1 in favor of Dauman. The lone dissenting vote was cast by Shari. If Dauman was worried about the vote—or about the *Weekend at Bernie's* jokes made at his expense—he didn't show it. He called into the meeting from St. Barts, where he was on vacation.

"Philippe has been instrumental with Sumner in every aspect of Viacom's success for nearly 30 years," Schwartz, the chairman of the board's governance and nominating committee, said in a statement afterward. "We believe his becoming executive chairman is in the best interests of the company and all shareholders." An additional factor that may have nudged the board in Dauman's favor: According to Securities and Exchange Commission filings, Dauman's contract contains a clause requiring Viacom to pay him roughly $88 million in additional compensation if he didn't succeed Sumner as chair.

Those hoping for a hasty Viacom overhaul howled with displeasure. "It raises questions about the board, corporate governance, and fiduciary duties," wrote Jackson in an e-mail to the media after the vote. A spokesperson for Shari put out a statement saying she would "continue to advocate for what she believes to be in the best interests of Viacom shareholders."

"There's a lot of bad sentiment about Philippe and the job he's done—I'm not in that camp," says Sal Muoio, founder of S. Muoio & Co., an asset-management firm that has less than 1 percent of Viacom's voting stock. "They're in a tough position given the demographics of their viewers. Things affect them more, first. I tend to be more patient."

"Philippe has nine months to say what he is going to do differently," says Gabelli. "Talking ratings improvements isn't going to work."

In early January, Shari gave a declaration to the court in L.A., in support of her father's case to dismiss Herzer's lawsuit. She stated that since her father kicked Herzer out of his home in the fall of 2015, Shari has reunited with him and they've patched up their differences. Since November, she'd spent 39 days visiting with him at his home. Likewise, her three children had been able to reconnect, she said, with their "beloved Grumpy." It was her belief, she stated in her court declaration, that since 2009 Herzer had received more than $70 million in cash and assets from Redstone's estate.

Pierce O'Donnell, an attorney for Herzer, responded by calling Shari's declaration "a fictional account of her relationship with her father." "The truth is that Manuela Herzer was a devoted, loyal, and caring friend of Sumner Redstone for almost two decades," he wrote. "The attacks on her are baseless and transparent attempts to obfuscate the truth about Mr. Redstone's tragic mental incapacity and manipulation." In court documents filed on Feb. 9, Redstone's lawyers revealed that on the same day in October that he stripped Herzer of her health-care duties, Redstone also changed his estate plan, redirecting $50 million and eventual ownership of his mansion in Beverly Hills from Herzer to a charitable foundation. Her attorney responded with a statement declaring that for Herzer "this case has never been about money" and calling the disclosure a "flagrant, intentional violation" of her privacy.

In a letter dated Dec. 18, Redstone instructed Dauman that when executing his late-stage health-care directive, he should take into account Shari's input "as if she were acting with you as a joint health-care agent." She and Dauman were already poised to sit across from one another on the seven-member trust. But now, just to further complicate matters, they will both have a hand in determining Redstone's end-of-life care.

Meanwhile, score Round 1 for the backgammon enthusiast. Dauman's reward, for now, is getting more time to fix the company he's led for the past decade. He could also potentially push for its sale. For years, there's been talk of remerging CBS with Viacom. Moonves and Dauman have always shot down that possibility. Given the consolidation in the TV programming market, there could be other suitors, such as AMC Networks or Time Warner.

On Feb. 9, Viacom reported its latest earnings. During the first quarter ended Dec. 31, overall sales fell 6 percent, to $3.15 billion. Adjusted profit declined 9 percent, to $1.18 per share. Domestic ad sales fell 4 percent. The company touted a new deal in which it will add programming channels to, and sell advertising on, Snapchat, the mobile messaging app popular with teens.

The company's stock, already down 53 percent since its peak in March 2014, fell more than 21 percent by the end of the day. On a conference call with investors, Dauman was defiant, vowing to prove critics wrong. "Our outlook and the facts have been distorted and obscured by the naysayers, self-interested critics, and publicity seekers," he said. "We will not be distracted or deterred as we build for the bright future ahead of us." B

—With Chris Palmeri and Lucas Shaw

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American Stud

THE PROFITABLE SECOND LIFE OF THE WORLD'S FASTEST HORSE

BY MONTE REEL
PHOTOGRAPHS BY THOMAS PRIOR

The verb to use in polite company is "cover." The stud covers the mare. Or: About 11 months after she was covered, the mare gave birth to a healthy foal.

The deed itself, here in the hills of Kentucky horse country, is governed by strict rules. Section V, paragraph D of *The American Stud Book Principal Rules and Requirements* is clear: "Any foal resulting from or produced by the processes of Artificial Insemination, Embryo Transfer or Transplant, Cloning or any other form of genetic manipulation not herein specified, shall not be eligible for

registration." No shortcuts, no gimmicks. All thoroughbreds must be the product of live, all-natural, horse-on-horse action.

Herein lurks tension and peril. When one 1,300-pound animal climbs on top of another, both sacrifice their natural sure-footedness for about 20 seconds of knee-buckling magic. Necks can be bitten, causing legs to kick and prompting centers of gravity to shift. An unlucky fall could break a delicate foreleg–a potentially fatal injury for a thoroughbred.

"Things can go wrong," says Richard Barry, the stallion manager at Ashford Stud, a 2,200-acre farm in Versailles, Ky. "Before any stallion is led into the breeding shed, there's an awful lot of preparation that has gone on behind the scenes. An awful lot."

Barry will soon choreograph the most hotly anticipated covering in recent history: American Pharoah's first coupling with a mare. Pharoah–the name was misspelled early and it stuck–last year became the first horse since 1978 to win the Triple Crown. Now millions, and possibly billions, of dollars in revenue depend on his talents in the breeding shed. In November, about two weeks after American Pharoah retired, his 2016 stud fee was set at $200,000, the highest ever for an unproven, first-year stallion. Only one other active stud–a tested, 15-year-old veteran named Tapit–commands that much per successful cover. Tapit's first-year fee was $15,000; his rate rose to its current $300,000 only after a decade of producing stakes-winning foals.

But Tapit was no American Pharoah on the track. He wasn't revered as a once-in-a-lifetime freak of nature. He didn't draw 15,000 fans to a training track on a summer day in Saratoga Springs, N.Y., when no races were being run. He wasn't a savior, the Chosen One who returned his sport to the national spotlight.

"We have never seen interest like this in a horse," says Barry, an Irishman who's worked with plenty of celebrated stallions over the past 40 years. "Even Cigar–no disrespect to him–didn't generate excitement even remotely close to this."

Cigar was the highest-earning thoroughbred in racing history. Early in 1997, when he was led to the breeding shed for the first time, he seemed a natural-born stud, successfully mounting 34 mares in short order. But weeks passed, and none of those mares got pregnant. Cigar was sterile. "There are no guarantees," Barry says, smiling and releasing a sigh so heavy it trembles on the edge of a groan. "It's in the lap of the gods."

Successful stallions are routinely matched with more than 100 mares in a five-month breeding season. Particularly energetic ones might cover as many as 200 a year. If American Pharoah produces several seasons of healthy and fast foals, standard pricing norms suggest that his stud fee will multiply exponentially. Very quickly, the $8.6 million he earned during his racing career would begin to look like small change.

Ashford Stud in Versailles, Ky. (left); twitches and leather kicking boots

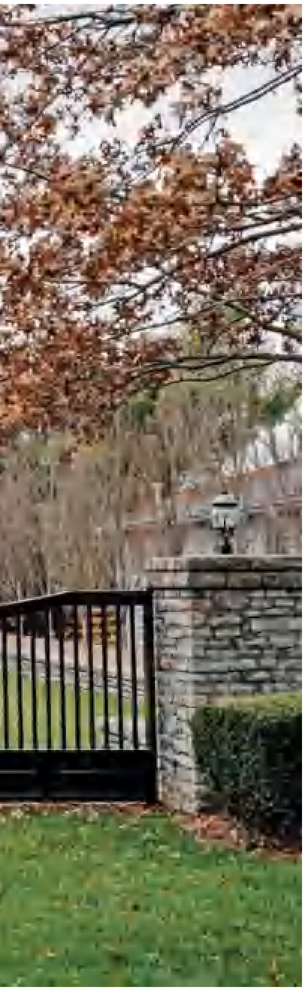
The 2016 breeding season begins on Feb. 15. There's a good chance one of the mares already on Pharoah's calendar will ovulate shortly before that date. If so, Barry says, the farm could push the season's first session up by 24 hours to take advantage of her optimal reproductive conditions.

Happy Valentine's Day, American Pharoah. No pressure.

Green fields roll toward the horizon, and a mid-December sun arcs across a marbled sky. A few stubborn leaves cling to branches. In the distance, American Pharoah ambles along a dirt path, heading for Ashford Stud's main stallion barn. It's a cathedral of hand-hewn limestone, floored with nonslip, rubberized bricks. The interior shines with darkly polished, furniture-grade red oak. A cinematic band of light, swirling with motes, streams through a window.

Ashford Stud is owned by Ireland's Coolmore Stud, a multinational breeding empire run by onetime Irish Senator John Magnier. For decades his Coolmore Boys, as they're known in Kentucky, were considered icy outsiders who tightly guarded the mysteries of their operation. That reputation was fueled in part by envy. Until 2008 stud fees were tax-exempt under Irish law, an advantage that ate at many of Coolmore's Kentucky competitors. When Ireland ended the tax break, much of the griping turned into respect for Coolmore, which produces more prized thoroughbreds than any other breeding outfit in the world.

Just before American Pharoah won the Triple Crown, Coolmore struck a deal for his stud rights with the horse's owner, Ahmed Zayat. After selling the Egyptian beer company Al-Aharam Beverages to Heineken in the early 2000s, Zayat moved to Teaneck, N.J., and established Zayat Racing Stables in nearby Hackensack. His son Justin, 23, the stable's manager, says the Coolmore contract prevents him from disclosing terms, but he confirms that the family retained a percentage of the



(right) at nearby Lane's End stable, used on a mare during covering

stallion's potential earnings for themselves.

"We'll continue to keep close track of American Pharoah, and we'll also keep close track of his progeny," Justin says. "Obviously that's partly because we still have an interest in him, but it's also because we plan to breed our own mares with him. We'll probably breed close to 10 mares with him this year."

Since American Pharoah arrived in Versailles in early November, Barry has been trying to throttle the horse's metabolism, to pack a couple hundred pounds on him, to calibrate his big, pounding heart to the farm's slow, pastoral rhythms. "With what he's going to be doing," Barry says, "you don't want a fiery, you know, torpedo going into the breeding shed."

Around 7 each morning, a farmhand turns out American Pharoah for about three hours of free time in a green field bounded by four-board fences. In the paddock next to Pharoah's, Barry's crew has planted a 24-year-old stallion—a wizened old-timer in the stud world—to serve as the young horse's mentor.

His name is Thunder Gulch. Maybe you've heard of him—in 1995 he won the Kentucky Derby and the Belmont Stakes and finished just three-quarters of a length behind in the Preakness. Since then, he's fathered 2,382 foals.

"If you get two young horses next to each other, they'll likely run around and race each other along the fence line," says Scott Calder, the farm's sales and marketing manager. "Thunder Gulch is more interested in eating grass."

The lessons of the sage seem to be rubbing off. When confronted with an open field, American Pharoah now shows little interest in ripping off quarter-miles, preferring to graze or roll in the mud.

Each day around 10 a.m., Pharoah walks back to his stall, where a farmhand gives him a spruce-up, vacuuming the dust off and bringing out the velveteen shine in his coat with a damp sponge and hand brush. Pharoah spends the rest of his time in his stall, sleeping, eating oats and hay, and staring for hours at all that gleaming, furniture-grade oak.

At Lane's End, a farm about 2 miles from Ashford, bloodstock manager David Ingordo has been paging through his farm's lineup of mares, searching for potential matches with Pharoah. He's looking for specific qualities—speed, endurance, body type—that would complement the champion's best traits. He could go deep into the horses' pedigrees, tracing their tangled genetic lines, creating amazingly complex maps of compatibilities with the help of computer programs. Or he could follow his gut.

"Some of my clients, they're big hedge fund guys, and they're into microtrading, and for them everything is an algorithm," Ingordo says. "I try to explain to them that there's something else you need, too.... An eye. I'm not sure exactly what an eye for a horse is, but it's real."

Ingordo first caught sight of American Pharoah in 2013, when the Zayats hired him to help them sell the horse at auction. They wanted $300,000, about average at that particular auction, but they didn't get it. According to conventional analysis, American Pharoah's pedigree was good. It wasn't great.

Ingordo looked at the horse's big nostrils, his perky ears, the masculine head, the strong neck, the deep saddle girth, his not-too-long back, the good hips, and the quality feet. He urged the Zayats to keep the horse. A few months later, Ingordo stood at a Florida training track, muttering unholy benedictions as Pharoah streaked by. "He was just an awesome specimen, an A-plus-plus," Ingordo says. "Some horses are so good, they can make their own pedigree."

True, but racing greatness doesn't always predict breeding success. Secretariat may have been the greatest horse that ever raced; he wasn't even close to the greatest stud. That would be Northern Dancer, who from 1965 to 1990 sired hundreds of stakes-winning champions. In the mid-1980s, an era of rampant speculative investment known as the Bluegrass Bubble, his stud fee climbed to $1 million. It's still the record.

"The No. 1 thing people seem to care about nowadays is fashion," says Rommy Faversham, a California-based pedigree analyst. "Everybody just wants to say, 'I'm breeding five of my mares to American Pharoah,' or whoever is the stallion of the month."

It's a risk plenty of thoroughbred owners seem eager to take. If American Pharoah can somehow replicate himself, they'll be popping Champagne corks in the winner's circle in three years. Ingordo, for one, expects to send Ashford Stud a list of about 10 mares he'd like to breed to Pharoah.

In a field behind Ingordo's office, Charles Campbell walks into a large barn of freshly mucked stalls. He's

Lane's End's broodmare manager. He pulls out an iPad, swipes open a spreadsheet, and reviews the ovulation cycles of each of the 137 mares on the farm. Some could soon be carrying Pharoah's foals.

As soon as the specific mares are identified, Campbell will begin monitoring their ovaries via ultrasound, measuring the follicles every day or two until they reach roughly the size of a golf ball. "You have about two days before the mare's breeding window closes," he says. "If you don't get the time you want, you might as well just cancel."

Before he arranges for a trailer to shuttle a mare over to Ashford Stud, Campbell will subject her to one last test. He'll parade a "teaser"—a small stallion condemned to a life of frustration—directly in front of her barn door, to see her reaction.

"These girls, if they're not interested, they'll just walk off," he says, waving a dismissive hand through the air. "But if they are interested, they'll stand here with their asses squashed against the door, just crying out, 'Breed me!' "

American Pharoah's mojo—the essence that so many mare owners want to capture—was easiest to see around a racetrack, where he consistently made otherwise sane people lose their minds for a little while.

On the morning of Oct. 31, 2015, about eight hours before the Breeders' Cup Classic, American Pharoah was resting in a cinder-block barn about a mile from the Keeneland racetrack in Lexington, Ky. The light inside was weak, and the only sounds were the snuffles and snores of sleeping horses. But in the far corner, near the second-to-last stall, a pair of armed Kentucky Army National Guardsmen in pale green fatigues stood sentinel. "You can walk right up to this stall next to me," one of them told a visiting reporter, "but no further."

They'd been on American Pharoah duty for two days, and they couldn't begin to count the number of people who'd wandered in wanting to snap a selfie or stroke his mane or grab a piece of his hay. All the other horses in the barn, some of them celebrated champions in their own right, simply didn't exist as far as most visitors were concerned.

"I tell people, 'We've got Mister Ed, a talking horse, in a stall right over there,' " the guard said. "But they don't care about a talking horse. All they care about is American Pharoah."

That afternoon, before each of the nine races, the horses were paraded in front of the fans in the paddock, a small lawn next to the main track. A crowd of well-barbered men in brown country suits and ladies with tiny hats pinned to their heads calmly observed the stallions and sipped fruity cocktails.

Then Pharoah came out. Everyone needed a glimpse. Spectators flared their elbows and lowered their shoulders, widening their stances. By the time the horse stepped onto the grass, decorum had been abandoned. Amid the jostle, Alex Crabtree and her younger sister, Darrah, battled to maintain their stations about five rows back from the low hedge that separated crowd and horse. "This is history," said Alex, 23. "We came here from Muncie, Indiana, just so we could see him."

The sisters rose on their tiptoes—but so did everyone in front of them, leaving them staring at the back of people's heads. Darrah remained defiantly optimistic. "I think I see his ears," she said. They held their cell phones overhead, hoping their cameras would catch what their eyes couldn't see.

About 10 feet behind the Crabtrees, a woman perched on a small brick ledge. "Photos for $5," she said. Heads turned, and the woman's eyes widened, surprised that so many people had paid attention to her. She reconsidered: "Photos for $10!" Seconds later she was holding three phones in her left hand, splaying them like playing cards, reaching down with her right hand for a fourth.

The race itself went as expected. Pharoah floated across the finish line 6½ lengths ahead of his nearest challenger, and everyone's day at the races was stamped with the permanent seal of historical significance. Women hugged. Men cried.

"I feel blessed and lucky," said a U.S. Coast Guard officer named Walter Lipski from Cape May, N.J. "This is it. He's done." A memory less than two minutes old filled him with nostalgia. "I'll never see anything like that again."

Later, in the rush to leave the track, supermodel Kate Upton, who'd appeared a couple of days earlier on *The Tonight Show* and said, "I just want to make out with American Pharoah," was led through the crowd by a lost-looking security guard; she implored him to get her back into the roped-off paddock area, into which American Pharoah had just disappeared.

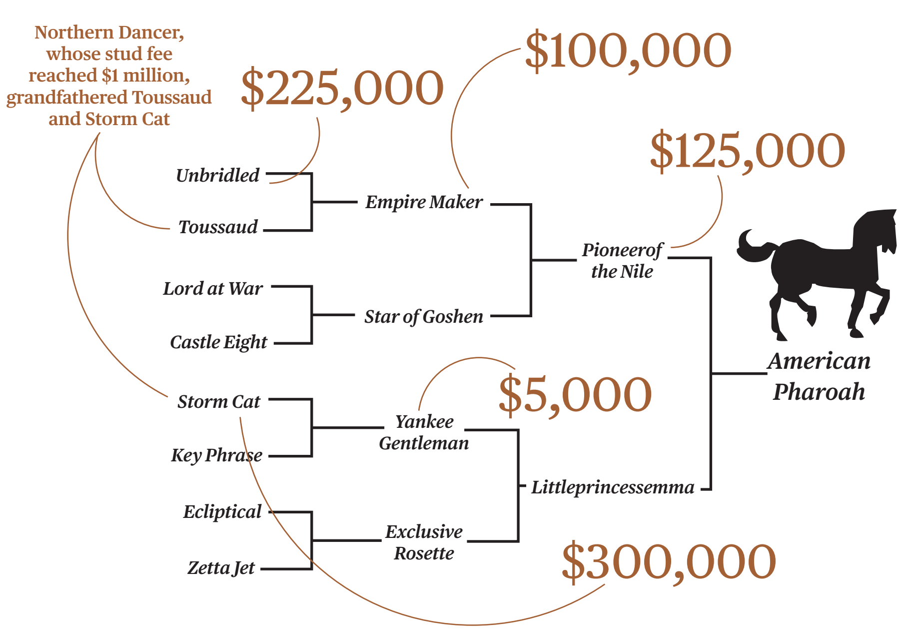
Near the track's concourse exits, television monitors replayed highlights of Pharoah's victory, and for a moment the image of the horse was frozen on the screen. "Would you just look at that face," said Amy Jackson, who runs an equine therapy center in Maryland. She seemed emotionally exhausted. "I mean, really! Look at that face!"

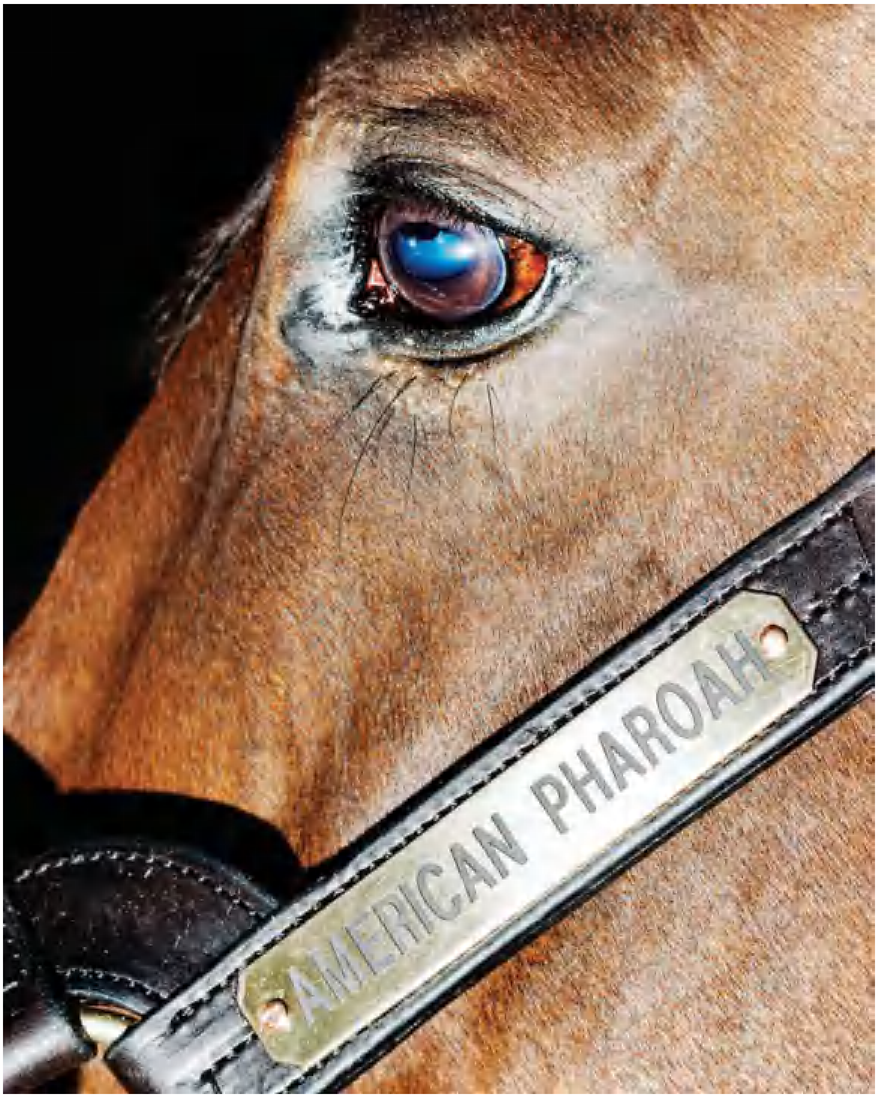
Remember Cigar, the sterile stud? That's not the worst-case scenario. Cigar's fertility was insured for $25 million. Coolmore Stud has taken out a similar policy on American Pharoah. Infertility is manageable. A far more threatening possibility is that he might end up like War Emblem, one of the most baffling creatures ever to be dragged into a breeding shed.

He was a champion, a Derby and Preakness winner trained by Bob Baffert and ridden by jockey Victor Espinoza, the same team that guided Pharoah last year. When War Emblem retired in 2002, a prominent Japanese breeding farm bought his stud rights for $17.7 million and put

WHO'S YOUR DADDY?

And how high was his stud fee?





him on a trans-Pacific flight to begin covering mares the following year.

War Emblem was always a bit cantankerous, Baffert says. But while he was winning high-stakes races, it was easy to give his obstinacy a positive spin, calling it independence or free-spiritedness. Not so at stud. His first year in Japan, he produced only four foals.

His Japanese handlers struggled to figure him out. It wasn't just that he appeared disinterested in the majority of mares he met; he seemed downright repelled by many of them. He reserved particular disdain for large ones. "And if he hates a type of mare," his veterinarian, Nobuo Tsunoda, told an industry website in 2008, "he attacks them." Several sports blogs and websites speculated that War Emblem might be gay.

They tried hormone supplements. They separated him from other studs, believing he might have found them intimidating. They flew in animal behaviorists for "intensive therapy" sessions.

War Emblem averaged just nine foals a year during his stud career, and last year, after several consecutive seasons of total noncompliance, his owners gave up on him. With the help of a $50,000 donation from Baffert, War Emblem flew back to the U.S. in October to be stabled near Lexington at a farm called Old Friends. It's a retirement home of sorts.

Espinoza visited War Emblem three days before he rode American Pharoah to victory at the Breeders' Cup. He loves both horses—one was his first Kentucky Derby winner, the other gave him the Triple Crown. But temperamentally, he says, the two stallions couldn't be more different. "War Emblem was always a little stubborn, but American Pharoah, he's just so sweet," Espinoza says. "He's like a little pet."

Breeders latch on to statements like that, interpreting them as hopeful portents. The folks at Ashford Stud marvel at Pharoah's patience and conscientiousness. They echo Justin Zayat's description of him: "A beast on the track and a teddy bear in the stall."

It makes him easy to handle. But he's not getting $200,000 to cuddle. "I'd like to see him get a little bit tougher once he starts breeding, to get the testosterone flowing," Barry says. "I'm not talking about him becoming a savage or anything close to that. But this is the moment when boys turn into men, essentially."

The breeding shed is a short walk from the main stallion barn. Inside, big blue pads, the kind you might see in a high school gym, line the walls. The floor is cushioned with the chopped-up tire treads used in playgrounds to soften falls.

Minutes before American Pharoah enters the shed for his first real tryst this month, a handler will lead in the mare. Brown leather pads evoking 1920s football gear will be strapped around her lower legs. Near the center of the shed, she'll be positioned in front of a mound of synthetic matting. That's when a miniature stallion, Ashford Stud's resident fluffer, will arrive and climb the mound of mats so he can get high enough to jump her. A thick apron tied around his waist will keep him from taking things too far.

That's American Pharoah's job. As he's led toward the mare, a small crowd will converge upon the scene. One person, wearing a helmet, will stand in front of the mare, manipulating her front leg, forcing her to shift more of her weight to the hindquarters to prevent back-kicking. Another person will handle the twitch—a stick with a loop of rope on the end, which is tied to the mare's upper lip; raising it helps keep the mare's head up, which keeps her backside down. Somebody else will stand directly beside the two animals, ready to provide Pharoah with a delicate assist, manually steering him into position if necessary. (It reduces the need for multiple jumps.) A fourth person will capture everything on video, in case lawyers, insurance investigators, Jockey Club officials, or anyone else needs to review the footage.

Pharoah, by this point, will have already caught an up-close glimpse of a female. "Before his first time, we'll bring in an old mare that's basically bombproof," Barry says. "What I mean by that is, he can jump up and down on her to figure out what we want him to do. Once he figures that out, he should be set."

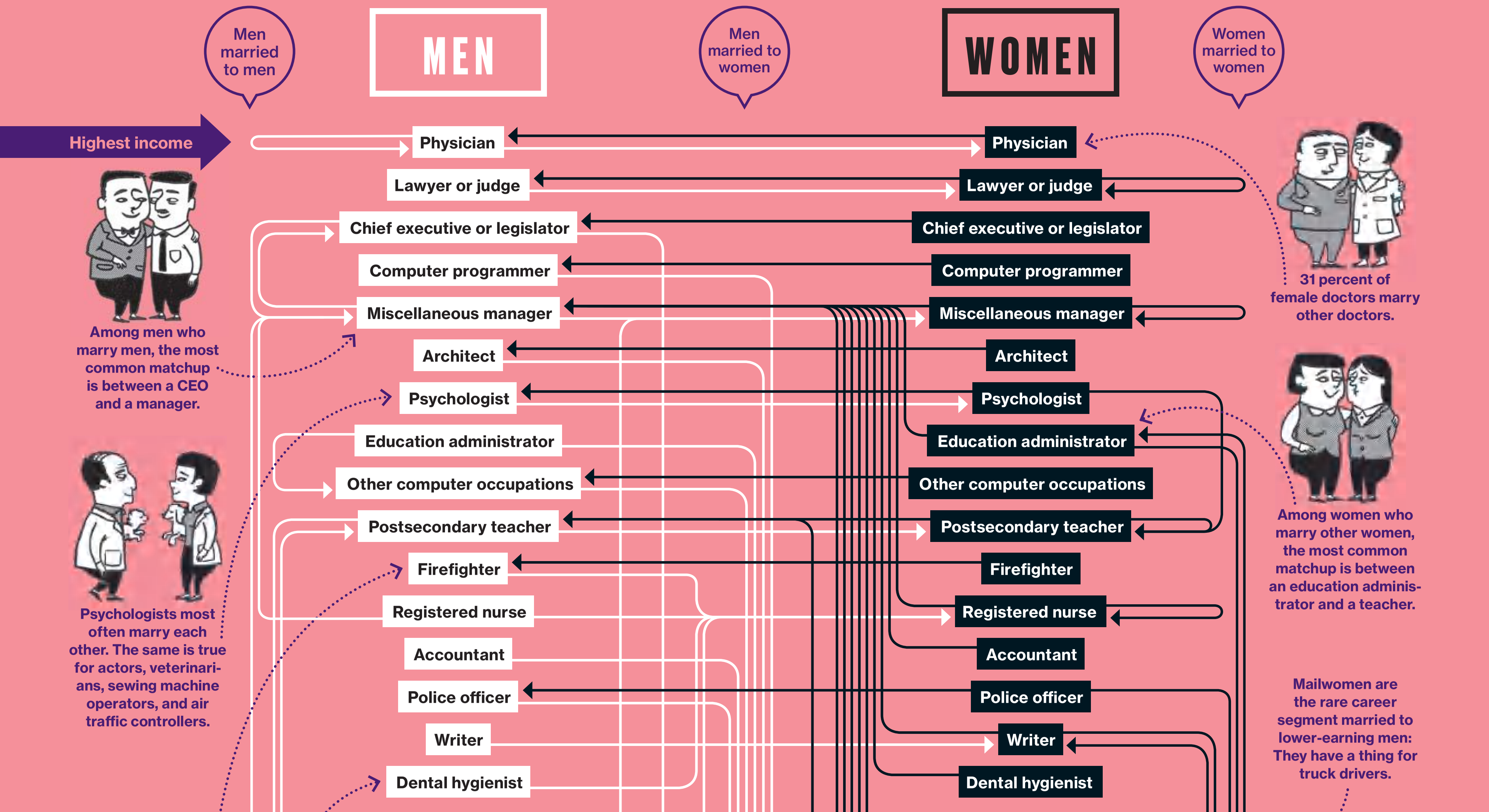
Justin Zayat spoke with the folks at Ashford Stud in December. They informed him that they'd just tested American Pharoah's reactions in the breeding shed for the first time.

"They just told me the first time that they brought him for what they call a test breeding, he was just like he was on the racetrack," Zayat said. "A champion." B

Who Marries Whom?

BY DOROTHY GAMBRELL ILLUSTRATIONS BY ADAM NICKEL

When it comes to falling in love, it's not just fate that brings people together—sometimes it's their jobs. We scanned data from the U.S. Census Bureau's 2014 American Community Survey—which covers 3.5 million households—to find out how people are most frequently pairing up. Some of the matches seemed practical (the most common marriage is between grade school teachers), and others had us questioning Cupid's aim (why *do* female dancers have a thing for male welders?). High-earning women (doctors, lawyers) tend to pair up with their economic equals, while middle- and lower-tier women often marry up. In other words, female CEOs tend to marry other CEOs; male CEOs are OK marrying their secretaries.



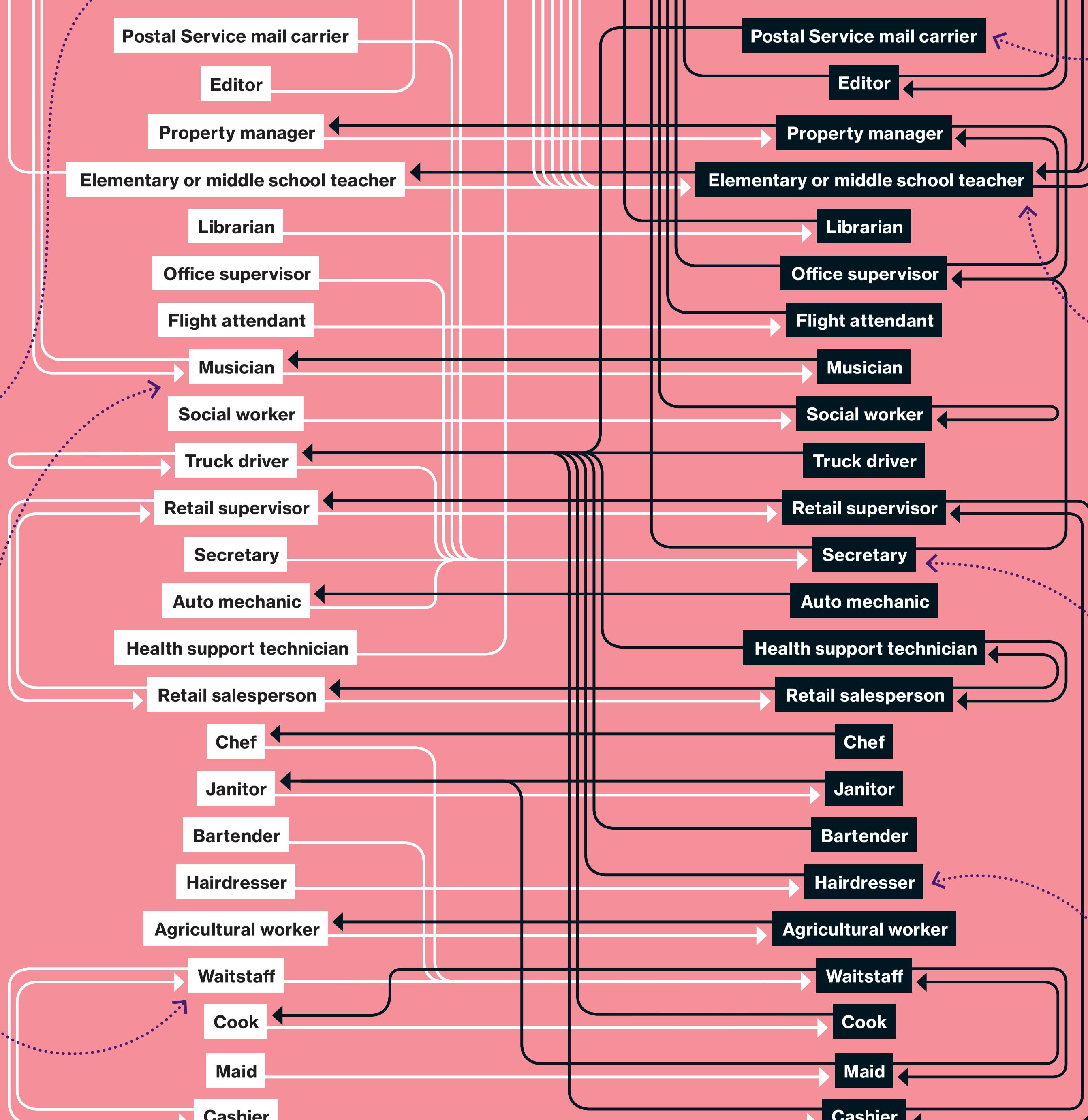
97 percent of firefighters are men.

The job with the highest rate of married people: dentists. 81 percent of them are married, most frequently to other dentists. Only 2 percent are married to dental hygienists.

There were 635 marriages between male postsecondary teachers and male musicians in the U.S.

If you work in a restaurant, you'll probably marry someone else who works there. That is, unless you're a dishwasher.

Lowest income



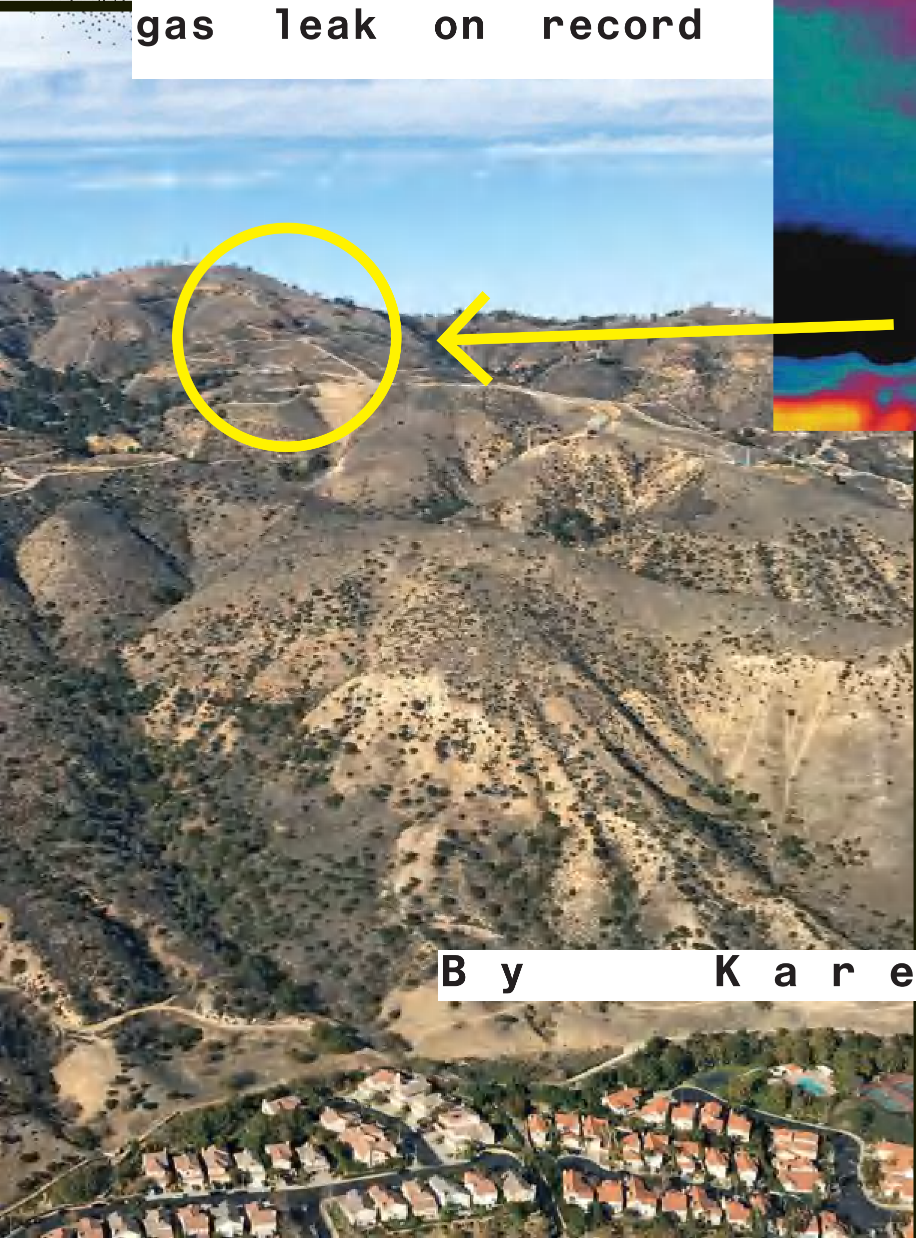
A lot of men marry grade school teachers. That's because there are so many teachers—and 80 percent are women.

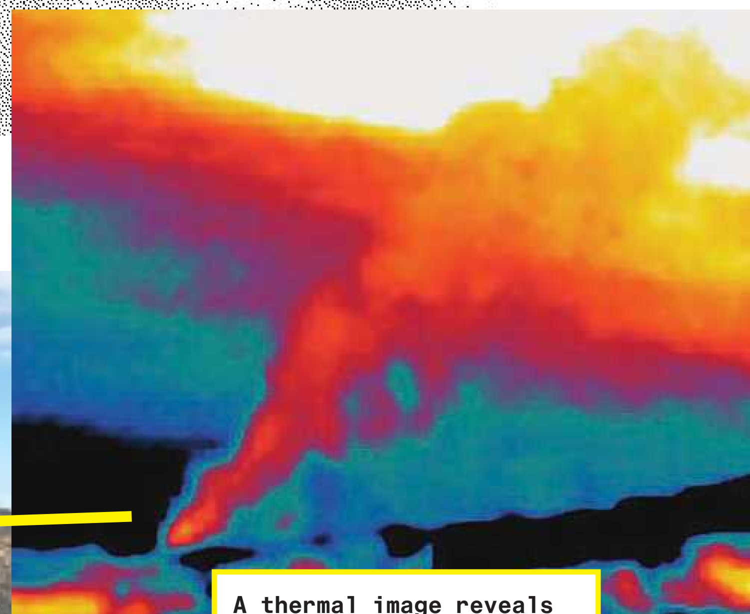
The average secretary makes $85,995 less than the average CEO.

What do enlisted military men and barbers have in common? They marry female hairdressers. (Male military officers marry female secretaries.)

COUPLES WITH FEWER THAN 600 OCCURRENCES ARE EXCLUDED. DATA: 2014 AMERICAN COMMUNITY SURVEY, MINNESOTA POPULATION CENTER INTEGRATED PUBLIC USE MICRODATA SERIES

Plugging the biggest gas leak on record





A thermal image reveals a methane leak in Aliso Canyon, near Los Angeles. More than 200 million pounds of the potent greenhouse gas have escaped.

By Karen Weise

FROM LEFT: COURTESY STEPHEN CONLEY; COURTESY ENVIRONMENTAL DEFENSE FUND

Steve Conley got the call early on Nov. 5. A natural gas storage well was leaking methane into the air at Aliso Canyon, near a Los Angeles suburb, and no one knew just how bad it was—could he get a read on it? Conley, an atmospheric scientist and a pilot, rushed to a small airport northeast of Sacramento. He's flown more than 1,500 hours measuring emissions over oil and gas operations in one of his two single-engine Mooneys. Tubes mounted on each Mooney's right wing suck air into two chemical analyzers stored in the luggage compartment. Soon, Conley was soaring south across California's Central Valley.

The leak had been spewing for about two weeks. Southern California Gas Co., the subsidiary of Sempra Energy that owns the facility at Aliso Canyon, had tried and failed to kill it. The previous night, homeowners from the nearby neighborhood of Porter Ranch had gathered to rail about the rotten-egg smell taking over their community. Tim O'Connor, a lawyer at the Environmental Defense Fund (EDF), attended the meeting, and feared the leak could be big enough to threaten not only the local community but also the earth's climate.

As the Mooney flew closer, O'Connor, who'd hired Conley, phoned Aliso's on-site incident commander with a heads-up about the flight. The SoCalGas staffer refused to approve the flyby, O'Connor says. "They said that the events on the hill were too dangerous and any additional distraction at that time could create an unsafe condition." This didn't make immediate sense to O'Connor. Conley wanted to fly a mile downwind of the leak to measure its plume, not directly overhead, and the whole area bordered the flight path of a nearby airport—planes in the distance were a common sight. Nevertheless, O'Connor gave SoCalGas the benefit of the doubt. Conley was a few miles out when O'Connor texted, instructing him to turn around. SoCalGas stands by its reasoning.

Two days later, Conley again flew to Aliso, this time on the state's dime. Conley started flying back and forth downwind of the site, taking measurements and gaining elevation with each pass. As data populated his screen, he recalls thinking, "What the hell is that?" The levels appeared to be at least 15 times greater than he'd ever observed. Equipment malfunction? The second analyzer showed the same readout. "This isn't an error," he concluded. After 17 laps, he reached the top of the plume and headed home.

Based on Conley's readings, the state would estimate that in less than a month, Aliso had released more than 68 million pounds of methane. Since then, it's leaked 132 million pounds more, the state says, based on Conley's subsequent flights. That makes Aliso potentially the largest-ever single release of methane into the atmosphere—at least, the largest ever recorded. Even as the U.S. pledges to reduce greenhouse gas emissions, methane leaks large and small are going unaddressed.

Roughly 95 percent of the natural gas that fuels stovetops and power plants is methane. Scientists take pains to observe it because, while it doesn't last in the atmosphere as long as carbon dioxide, it's a far more potent greenhouse gas while it's there. Methane burns quite cleanly compared with coal, but when it escapes into the air, it has 84 times the global warming impact as carbon dioxide over 20 years.

When methane leaks, it's not obvious like an oil spill. Methane's invisible and, for most of its supply chain, has no odor. That helps explain why there's been such a gap in public awareness of what a growing body of research has found: There are pervasive, daily methane leaks across the country's energy infrastructure that far outstrip federal estimates. And the bulk of releases come from "super emitters," which range from persistently malfunctioning valves to one-time events.

Aliso's drawn attention to methane like no other emission. It's releasing in an urban area, the one part of the supply chain where methane's mixed with sulfurous chemicals so leaks can be detected by smell. And researchers and activists have made the leak's massive plume a must-see. On Dec. 20, EDF released the first infrared aerial footage of the Aliso leak. The video, taken by O'Connor and a colleague in a rented Cessna, shows a haunting black cloud streaming endlessly from the hillside. Viewed more than 1.3 million times on YouTube, the viral image shows the threat that has led thousands of Angelenos to leave their homes. It also exposes a major challenge to the climate benefits of the country's shift from coal to gas. SoCalGas has vowed to mitigate the greenhouse impacts from Aliso, though it hasn't specified how—or how much it will cost.

Before there were 30,000 residents living on pleasant streets like Via Botticelli and Vista Grande Way, Porter Ranch was just the scrubby foothills of the Santa Susana mountains, which run along the northern edge of the San Fernando Valley. In the late 1930s, an oil company owned by J. Paul Getty started drilling for crude among the ridges. Wells there produced for decades before depleting the reserves.

In 1971, SoCalGas bought the Aliso Canyon site and converted it to storage for natural gas. SoCalGas uses the 115 wells there to inject gas into the same underground field that once held oil. It's the fifth-largest among about 400 such storage facilities nationwide and supplies 11 million customers across the Los Angeles basin. Since developers built subdivisions starting in the late 1980s, the community peacefully, if unknowingly, coexisted with the subterranean lake of gas.

Then, late in the day on Friday, Oct. 23, workers around Well SS-25 noticed the sulfurous smell. At the time, "it was not something that was alarming to us," says Jimmie Cho, senior vice president for gas operations and systems integrity at SoCalGas. Minor leaks are routine in the industry. The workers went home for the night.

The next day, SoCalGas tried to stop the leak by using a typical technique of forcing a salty fluid down the well to overpower the upward pressure of the escaping gas. Cho says to imagine holding a giant straw between your lips, tilting your head back, and blowing, as liquid is poured into the open end. "You fill the straw up with fluid, and you're pushing against it, you'll keep bubbling that liquid," Cho says. But "at some point, there will be so much liquid, your lungs won't be able to actually push any more."

It didn't work. So the company called in Boots & Coots, a Halliburton subsidiary based in Houston that specializes in wrangling control of leaky wells. SoCalGas also stopped injecting new gas into the facility, which was close to its peak capacity, about 86 billion cubic feet, as the company prepared for winter demand.

Initially, the gas wasn't spewing directly from the wellhead. Boots & Coots determined it was seeping from the well's casing about 500 feet below the ground. The gas worked its way up and out into the atmosphere through the soil. "It was almost like gas was coming up through a sponge and making its way through various cracks and natural parts of the geology," Cho says.

Boots & Coots tried to more forcefully shove brine down SS-25 only to discover an ice plug had formed in the well, complicating access to the leak. Cho says the ice may have resulted from a pressure imbalance during an early kill attempt. Breaking down the ice required long coiled tubing, hauled in from Louisiana on four semi-trucks, that works like a plumber's snake. In early November, Boots & Coots broke through the ice plug. Then, on Nov. 13—a day, Cho says, that is "etched in our memory"—another kill attempt only made matters worse.

As Boots & Coots again pushed brine down the shaft, the upward pressure of the leak dramatically overwhelmed the downward force of the fluid. Cho says the brine formed a channel through the soil as it came back up to the surface, which created a highway of sorts for the liquid—and later gas—to escape faster. "It went from very diffuse to very focused. That may have been part of the reason why ... the [leak] rate may have changed," Cho says cautiously. Conley found that by Nov. 28, emissions were about 16 percent higher than he'd measured a few days before the kill attempt. At its peak, Aliso emitted almost 128,000 pounds of methane an hour, Conley estimates. (Boots & Coots deferred comment to SoCalGas.)

On Nov. 19, after another kill attempt, SoCalGas announced a Plan B that may sound familiar from the 2010 Deepwater Horizon oil spill—digging a relief well to intercept SS-25 at its base, about 8,600 feet below ground. The drilling started on Dec. 4. SoCalGas said around that time it could take months to complete the task.

By the middle of December, reality was setting in at Porter Ranch that the leak wouldn't be plugged anytime soon. More residents began asking SoCalGas to pay for temporary housing, and the company opened an office in a shopping center, wedged between SoCal Blow Dry Bar and Visionmax Optometry, to field their complaints. Hundreds of people have been showing up each day, and about 4,460 households are living in hotels or other short-term accommodations, at SoCalGas's expense.

Plaintiffs' lawyers, including Robert F. Kennedy Jr., courted panicked residents, saying SoCalGas should pay for what they called unknown health risks and wrecked property values. More than 2,000 people showed up for a December meeting organized by Erin Brockovich and the lawyers she works with.

A month later, on a Friday evening in mid-January, hundreds of Porter Ranch residents packed the pews of Shepherd of the Hills Church. Onstage, 11 state officials sat at long tables, resembling a modern-day *Last Supper*. Their backdrop was a set of partially constructed stone houses, under way in early preparation for the church's popular Broadway-style Easter pageant. Dudley Rutherford commanded the attention of the crowd as only a megachurch pastor can. "Good evening!" he boomed. Rutherford asked the crowd not to berate the officials, who were there to provide information on the leak, then added, "We pray for you and for all the people on the stage."

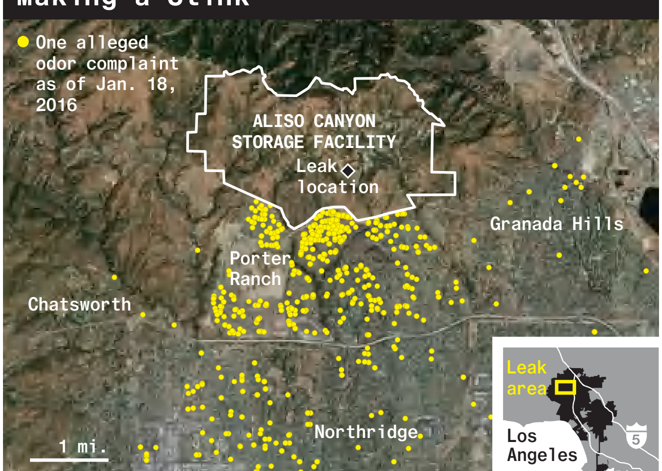
The state officials attempted to comfort the audience, offering assurances that the levels of gas compounds detected in Porter Ranch posed no long-term health risks. They vowed to hold SoCalGas accountable, both to residents and for the environmental damage done by the emissions. Then homeowners snaked down the long aisles for a turn at the mic. They told stories of headaches and bloody noses, dizziness and nausea, all known side effects from the smelly chemicals added to the methane. Some suggested their own inventions for capturing the renegade gas. Others vented about delays in getting relocated.

Mostly, they expressed deep insecurity about losing their nest eggs if their neighborhood is deemed undesirable and anxiety about possible health effects, from both SS-25 and smaller leaks they suspect have happened over the years. "I found out I have a 7-pound Chihuahua whose blood oxygen level is too low," said a homeowner named Lisa. "I can't keep him in the house. He has to go out. Maybe I shouldn't have stayed." A fifth-grader said his pet fish kept listing on its side. "I think that it's dying," the boy said. "Could the gas be affecting animals too and not just people?"

An older man noted that the BP oil spill cost billions in property and environmental damage. He asked, to loud applause, "Is there a chance that the gas company can go bankrupt and just walk away from it?" That's unlikely, and Sempra says it will be able to cover the costs of the leak. But Aliso still provides a topical cautionary tale.

Around 2009, as fracking wells popped up across the U.S., public debate focused on concerns over contaminated water. In an iconic, if much-disputed, scene in the documentary *Gasland*, filmmaker Josh Fox lights tap water on fire. But since

Making a Stink




Porter Ranch parents and students protest on Dec. 11

MAP BY CEDRIC SAM AND CHLOE WHITEAKER. DATA: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, U.S. GEOLOGICAL SURVEY; PROTEST: AL SEIB/LOS ANGELES TIMES/POLARIS

“Is there a chance that the gas company can go bankrupt and just walk away from it?”

then, scientists have begun to fret about how much methane is escaping into the atmosphere. Too much could counteract the climate benefits of the cleaner-burning gas.

Early studies relied on theoretical modeling or limited physical measurements. Fracking supporters seized on findings that reported low emissions, while opponents touted estimates of rates so high that natural gas appeared dirtier than coal. “That was an unresolvable conversation,” says Steven Hamburg, EDF’s chief scientist. So in 2012, EDF started the largest-ever series of peer-reviewed studies to measure emissions across the oil and gas supply chain. It committed $18 million to fund 16 academic studies not just at production sites but along pipelines and distribution networks, at storage facilities like Aliso, and to endpoints in cities, where gas flows to heat homes and cook meals. Most of the funding came from foundations, with another third coming from oil and gas companies. “One of the biggest questions is, if you had the wrench and wanted to tighten down the leaks, where would you start?” says Tom Ryerson, a methane researcher at the National Oceanic and Atmospheric Administration. His work isn’t funded by EDF.

The findings in North Texas’s Barnett shale field, the first basin to widely use horizontal drilling and hydraulic fracturing (fracking) methods, were frightening and have proven typical. There, researchers measured emissions 90 percent higher than the estimates in the Environmental Protection Agency’s Greenhouse Gas Inventory, and they found that 10 percent of facilities accounted for 90 percent of the leaks. Some leaks were “persistent,” like unlit flares, malfunctioning valves, or other avoidable situations. Others were “episodic,” like Aliso, though at a smaller scale. Many could be prevented with better monitoring and operations.

The patterns continued in California, where the state found methane emissions are as much as 74 percent higher than previous estimates. Regional air quality inspectors visited Aliso in early December and found, in addition to the big leak at SS-25, 15 wells emitting methane. The minor leaks were quickly fixed.

The EPA in August proposed the first federal rules to limit methane leaks from oil and gas operations, but they mostly cover new facilities. About 90 percent of emissions come from older sources, according to an EDF study by the consulting firm ICF International. The American Petroleum Institute, in a December call with reporters, said the industry has reduced leaks and that “voluntary methods are the best way to reduce methane emissions from existing sources.”

Most gas regulation falls to states, which generally haven’t focused on leak detection and prevention. Colorado was the first to require regular monitoring and preventive maintenance. In early February, California proposed rules that would require quarterly inspection of both new and existing gas production sites, and emergency regulations now mandate daily monitoring of storage facilities such as Aliso.

To keep pressure on authorities, EDF has stepped up monitoring. On a Tuesday in January, Bud McCorkle and Andrew John, of Leak Surveys Inc., took a helicopter up to look for what McCorkle called “a real eyebrow raiser” in the Barnett shale field to illustrate that Aliso is hardly the only trouble spot. As John piloted the chopper over mile after mile of oil and gas infrastructure, McCorkle said, “Sometimes you will see a hatch open, and I wonder if it was an accident or if they want to relieve the pressure.” The ICF study found that methane emissions could be reduced by 40 percent with simple, low-cost fixes—like closing hatches.

It didn’t take long for McCorkle to spy a leak. “We’ve got an emission coming off an unlit flare,” he said. “That single galvanized stack over there.” On the ground, a man was visible inside the fenced-in site, standing next to a white pickup truck. He looked up as the helicopter circled above, seemingly unaware that methane was escaping nearby. When McCorkle briefly got a clear infrared shot, he said the unlit flare “just looks like a burning cigarette,” a trail of methane twisting up into the atmosphere.

California Attorney General Kamala Harris and a long line of others have sued SoCalGas for the Aliso blowout. Los Angeles prosecutors filed misdemeanor criminal charges against the utility for not immediately reporting the leak. (SoCalGas says it will respond to the case “through the judicial process.”) A regional air quality regulator said in a suit that the company’s negligence caused the leak, and multiple state agencies are conducting their own investigations. SoCalGas’s parent, Sempra Energy, has said it has more than $1 billion in insurance coverage that it believes will cover many of the current and expected claims.

In a worst-case scenario, Sempra could face a bill of as much as $900 million, says Brandon Barnes, an energy litigation analyst for Bloomberg Intelligence. If the leak is stopped by the end of March, the total cost could be about $250 million, he estimates. That includes roughly $115 million to stop the leak and relocate families, $40 million for civil liabilities, and $11 million in state fines. One of the biggest expenses could come from mitigating the climate damage, which the state says it will require. Buying carbon offsets would cost about $92 million in Barnes’s calculations. SoCalGas won’t comment on the liabilities. “Our focus is to stop the leak,” Cho says. He says that starting on Nov. 11, the company has purposefully withdrawn gas from the facility to reduce the pressure, which cut the rate of emissions by 64 percent. And as of Feb. 8, the relief well was within 20 feet of intercepting the bottom of SS-25, at which point SoCalGas expects to use mud and concrete to permanently plug the well. The final steps of drilling are slow, to allow for regular stops to “ping” measurements to the well. “You want to be on center and on target,” Cho says. “You want to do as many pings as necessary to reinforce, ‘I’m getting closer, closer, closer. I’m there.’ ” Ⓑ
—*With Mark Chediak*

BUY YOUR TICKETS NOW ● BUY YOUR TICKETS NOW ● BUY YOUR TICKETS NOW ● BUY YOUR TICKETS NOW ● BUY YOUR TICKETS NOW ● BUY YOUR TICKETS NOW ● BUY YOUR TICKETS NOW ●

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ETC

Jason Hairston is on the hunt for a different outdoorsman
By Kyle Stock

Photograph by Molly Matalon

Killing It

Killing a Canadian mountain sheep is a little like climbing Everest. It's expensive and arduous and typically involves terrible weather. Clothing is critical, but hunters can't wear the garish, down-stuffed suits that climbers in the Himalayas favor. Sheep, it turns out, have incredible eyesight: Sophisticated camouflage is essential. "I'd say 80 percent of the hunters I know wear Kuiu," says Bob House, who charges $40,000 for guided expeditions in the Yukon. "I absolutely love it when my client steps off the plane and is fully outfitted in that stuff." If paying tens of thousands of dollars and traveling to a remote part of Canada to kill sheep doesn't already signal how serious someone is, Kuiu does.

Unless you're an experienced sheep stalker, you've probably never heard of Kuiu, named after an Alaskan island and pronounced "koo-yoo." But the company is conferring on hunting gear the status that Patagonia did for outdoorwear and Lululemon Athletica did for yoga pants. Kuiu is making it lighter, more water-resistant, more breathable, and better looking—an upgrade to what's been previously available, which has been as oblivious to performance, fit, and aesthetics as a deer on the opening day of hunting season.

Depending on where you live and the number of Wunder Under pants you own, you may assume that hunting is a niche sport. You'd be wrong. Hunting is a huge and remarkably stable business opportunity: About 15 million people bought a license in the U.S. last year, a number that's remained virtually unchanged for the past decade, according to the U.S. Fish and Wildlife Service (it estimates that hunting gear and apparel take in about $23 billion annually). There are far more hunters in the U.S. than rock climbers or surfers, and almost as many as there are skiers and snowboarders, according to annual surveys by the Outdoor Foundation. Bowhunting, in particular, is booming; because it requires more tracking, young, fitness-focused people are picking it up. "We're finding that it's resonating with the farm-to-table movement," says Jon Edwards, president of Schnee's, a hunting retailer based in Bozeman, Mont.

All this has presented an opportunity for Kuiu's 44-year-old founder, Jason Hairston. He's an unlikely apparel magnate. But he was an unlikely football star, too. He played college ball at the University of California at Davis, a school better known for turning out almond farmers than linebackers. In 1995 he was invited as an undrafted free agent to the San Francisco 49ers training camp, where he spent his days as a tackling dummy. Then-defensive coordinator Pete Carroll took a shine to his speed, attitude, and work ethic, though, and he made the cut. After one season and a particularly brutal hit, an old neck injury

Hidden in **Plain** Sight

How Kuiu's camo works

Most camouflage is designed to help a hunter blend in by **resembling a bunch of leaves or branches.** Many companies don't develop their own; they buy a license to an existing pattern, which is why **a lot of hunting apparel looks the same,** regardless of the brand.

Kuiu's Vias pattern is designed to **contrast with nature**, breaking up the silhouette and creating visual confusion. Hairston got the idea from **African wild dogs**. Their light and dark colors make them unrecognizable to prey.

FROM LEFT: GETTY IMAGES (1); COURTESY KUIU (2); ALAMY (1)

“There’s **such a stigma** around hunting that **so many companies** are **afraid** of. That’s worked **great for us**”

caught up with Hairston, causing him to lose feeling in his left arm. The injury and the surgery that followed ended his football career, and he found himself selling commercial real estate in Boise, Idaho. “I was completely lost as to what to do next,” he says.

Sales came naturally. Hairston was successful but unhappy, living for weekend bowhunting trips. He would hike deep into the mountains and, channeling his inner linebacker, hump out with whatever he’d killed. It was on one of these trips, in fall 2004, that Hairston and Jonathan Hart, a college friend, got the idea for the company that would be a steppingstone to Kuiu. They were clad for warmth in lightweight mountaineering apparel—a patchwork of North Face, Patagonia, and other brands—yet, to stay hidden, they swaddled themselves in cheap camouflage that was ill-fitting and heavy. “The mountaineering world was light years ahead of the hunting industry,” Edwards says.

At the time, high-end brands that skiers favored didn’t bother catering to the hunting market, and existing hunting labels had a cartoonish view of their customer: overweight and underpaid. Hairston and Hart’s new company, named Sitka for the Alaskan city, made the first camo apparel that featured what would have been familiar to any shredder: wicking fabrics, weatherproof zippers, armpit vents, and welded seams. It was cut for athletic builds, not beer bellies, and while it would cost more than other camo, Hairston was convinced there was a crowd of affluent, fit sportsmen who’d pay a premium for high-functioning gear. The co-founders did no market research, but any McKinsey consultant would have given them a green light.

Sitka struggled at first. Hairston couldn’t find reliable suppliers and factories. He started on the trade show circuit with a hodgepodge of fabric samples and shoddily sewn garments. He had to stack the first batch of merchandise in his yard (he’d moved to Dixon, Calif.) until he could make space in his garage. But the demand was there: Schnee’s bought $10,000 worth of coats, pants, and thermals and sold out in two months. By 2007, Sitka’s second year in operation, almost every major outdoor retailer was stocking the brand, and it did about $2 million in sales. Hairston and Hart were struggling to stay ahead of demand in late 2008 when W.L. Gore, makers of Gore-Tex, approached them about using the fabric. They sold Gore a stake in Sitka—and then, worried the deepening recession would crush business, sold the company outright. “I spent my last two weeks at Sitka writing the business plan for Kuiu,” Hairston says. (Hart stayed on to steer the brand.)

Unlike Sitka, Kuiu sells directly to consumers, almost exclusively online. This allows the company to offer even better materials at a similar price point; a $300 Kuiu jacket would cost about $450 elsewhere. Kuiu features merino wool from New Zealand, Pittards leather from England, and covetable waterproof fabrics from Toray, a Tokyo-based chemical conglomerate introduced to Hairston by a former Patagonia designer. (To stand out even more, Kuiu uses proprietary camouflage; see opposite page.) Hairston did public relations, too, blogging about the suppliers behind his materials and people such as a retired Lockheed Martin engineer helping Hairston piece together a carbon-fiber backpack system.

“I realized if our products were going to sell, we had to educate our customers,” Hairston says. He also detailed his field tests with posts that typically ended with pictures of a gutted animal and a huge set of horns. It was a bloody spectacle—and hunters ate it up. In its first day of sales, Kuiu moved $500,000 of merch. “There’s such a stigma around hunting that so many companies are afraid of,” Hairston says. “That’s worked great for us.” This year, Kuiu expects sales of about $50 million.

Kuiu’s success hasn’t gone unnoticed—major retailers have the company in their sights. Under Armour now sells hunting apparel, and reviewers are praising Cabela’s in-house gear. At Schnee’s, Sitka is stocked alongside Duckworth, a line of wool gear the retailer developed with scientists at Montana State University. (Hart says Sitka has grown 35 percent to 40 percent every year since Gore bought it, but he declines to share revenue figures. The brand got a boost in 2013 when Vladimir Putin was spotted wearing it.) Kuiu, for its part, is trying to expand its customer base, homing in on new turf. Next year it will release a line of shorts and shirts for trail running, and its $190 Guide jacket can now be had in “major brown” or “phantom gray,” colors that seem particularly suited for snowboarders. It’s working on a uniform for the U.S. Navy Seals, some of whom are already regulars, and the proprietary camouflage is becoming a business of its own: Kuiu is collecting licensing fees from companies plastering the designs on everything from binoculars to hunting bows. Those who hunt with arrows have to get close to their prey and so are particular about their camo. Which is exactly what Hairston wants. B

COLONEL OF TRUTH

"Real" is the new "healthy." By Claire Suddath

KFC's Nashville hot chicken is a reddish-hued, cayenne-and-paprika-encrusted take on the dish invented at the city's Prince's Hot Chicken Shack, which may be the only plywood-walled strip mall joint to win a James Beard award. Even the "medium" spiced chicken at Prince's will make you sweat. "We obviously couldn't do that," says Kevin Hochman, KFC's chief marketing officer. "We picked a spice level that would attract the most people."

Hot chicken made its debut in January with a TV commercial in which Colonel Sanders, played by Norm Macdonald, stood in front of a painting of the Nashville skyline and talked up the city's "legendary" fried food. In another ad, he showed slides from a trip to the city, with pictures of the Nashville airport (not the real one) and a classic diner (that doesn't exist). The faux-vintage spots fit with KFC's attempt to reposition itself as an old-fashioned restaurant—last year, it started using the Colonel as a mascot for the first time in 20 years and returned to serving chicken in its original red-and-white-striped buckets—that serves up bona fide regional specialties. "There's this push toward authenticity and eating food with ingredients you can pronounce," says Bonnie Riggs, a restaurant industry analyst at NPD Group. "It gives the perception that the food is healthier. 'Healthy' doesn't mean low-calorie or low-fat anymore; it means 'real.' " Which explains why McDonald's added a lobster roll to menus in New England last summer—and why Wendy's is offering a North Pacific cod sandwich from Portland to Portland.

KFC usually releases new menu items in the spring when the weather is better, but it's hoping hot chicken becomes a Buffalo wings alternative. The dish got its own pregame Super Bowl ad and a food truck tour of eight cities in the U.S. named Nashville. Hochman won't share sales figures—but the city ordering the most hot chicken? That'd be the one in Tennessee. Ⓑ

Hochman says 60 percent of the hot chicken KFC is selling is boneless tenders—a sharp increase from the 10 percent of the chicken it usually sells

PHOTOGRAPH BY JASON FALCHOOK FOR BLOOMBERG BUSINESSWEEK

PEACHY KEEN

The great new app you don't need. By Kyle Chayka

Everything about Peach, a mobile social network for the iPhone that was introduced at January's Consumer Electronics Show in Las Vegas, seemed hip, down to the URL: peach.cool. Part Twitter, part Facebook, part Snapchat, it combines everything people like in an app. A popular emoji even inspired its name.

The weekend after its debut, Peach breached the top 10 in iOS networking apps. The feat, requiring tens of thousands of downloads per day, was fueled by media infatuation (*Wired*: Peach "is so hot right now"; Mashable: "WTF is this app everyone's talking about?"). And then, like a fruit at the peak of ripeness, interest in Peach softened. By the end of the month, it was obvious: "Peach is a turkey," proclaimed mobile news site BGR.

FACEBOOK ALTERNATIVES HAVE NO AIR TO BREATHE

It was a whiplash-inducing hype cycle, the likes of which seem to occur more and more frequently. Ello, a social network free of advertising, saw hysteria turn to snark as it failed to make a dent in Facebook's user numbers. Path, a photo-sharing social network vaunted for its design and pedigree (its founder is a former Facebooker) raised $77 million only to fade into oblivion last year after it was quietly acquired by an obscure South Korean company.

Before cratering, each of these apps boasted a new mode of digital interaction that might have been better than current favorites, if only they'd been given more of a chance. But there's no air for alternatives to breathe—not with Facebook to keep tabs on friends (and frenemies), Twitter for news (and self-promotion), and Instagram for sharing photos (and humble brags). Then there's LinkedIn for professional development, WhatsApp for messaging, and Snapchat for anything else we wouldn't want published to posterity. We've settled into a world where we're good with the apps we have, thank you very much. Which is too bad: Just because an app can't take away market share from Facebook—a suicide mission from the start—doesn't mean it can't add value. "I always love seeing new experiments," says famed investor Marc Andreessen, who won't say if he has money in Peach.

How might a fresh app stand a chance? "It needs to be more sustainable than just a new thing to play with," says Hunter Walk, a seed-stage venture capitalist. "There needs to be some creation, communication, or consumption hook, maybe all three, that causes you to return." And even this may not be enough. Peach has at least two of those qualities. For one, it excels at creation. Its unique "magic word" system offers users a shortcut to making different kinds of posts: Type "shout" to generate a simple message in large text on a monochrome or photo background; "rating" to append a star to your post; or "mood" to leave a LiveJournal-like confession. The app is good at communication, too. Friendships are mutual—no public follower numbers means less status anxiety. Consumption is harder to judge. The space is so intimate that brand accounts feel strange. Peach content is personal, not for broadcast.

Peach hasn't been totally devoured yet. There's still a core group of users, but if the app pivots in an attempt to reclaim lost buzz and "no one's sure what they do anymore," says Ello creator Paul Budnitz, they'll lose that constituency. Choire Sicha, co-founder of the Awl media network and an early and avid Peacher, says he still likes the service: "I had a really nice day on Peach today. It was probably eight minutes of my life, but it was meaningful." B

Critical Mass

A random ranking of recent bad behavior

Most Worst

WATCH WHAT YOU SAY TO ELON MUSK

After a venture capitalist complained about the launch event for Tesla's Model X (it started late, was too crowded, and focused too much on safety), Musk canceled the customer's order. If Time Warner's CEO listened this carefully, no one would have cable.

71

EGGLESS MAYO: IS IT REALLY MAYO?

Hellmann's said no, sued Just Mayo over its vegan product, dropped the suit—and will soon introduce its own version.

34

NEW KANYE WEST ALBUM "BEST ALBUM OF ALL TIME," TWEETS KANYE WEST

'Ye later clarified, calling *Waves* only "ONE of the greatest" records in history. At least he's not setting expectations too high.

9

Least Worst

ILLUSTRATIONS BY TIM LAHAN

Flash You

We tested dozens of shadows, sticks, and polishes

Guerlain
Le Crayon Yeux kohl liner
in Deep Purple
$31; guerlain.com

Chanel
Illusion D'Ombre luminous eyeshadow in Ocean Light
$36; chanel.com

Yves Saint Laurent
Mascara Volume Effet Faux Cils in Hippie Green
$32; yslbeautyus.com

Tom Ford
Cream color for eyes
in Siren Blue
$45; tomford.com

Tom Ford
Patent Finish lip color
in Orchid Fatale
$52; tomford.com

M.A.C. x Zac Posen
Darling Clementine lipstick
in Bright Orange
$18; maccosmetics.com

Le Métier de Beauté
Moisture matte lipstick
in Smoke
$32; neimanmarcus.com

Chanel
Rouge Coco Shine
in Mighty
$37; chanel.com

Yves Saint Laurent
La Laque Couture nail lacquer
in Corail Colisee
$28; sephora.com

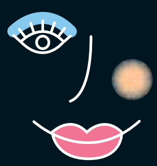
Deborah Lippmann
Walking on Sunshine
$18; deborahlippmann.com

Orly
Fancy Fuchsia
$3.99; orlybeauty.com

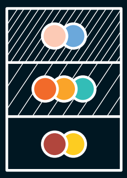
China Glaze
Son of a Peach
$7.50; ulta.com

NO CLOWNING AROUND

Maybelline New York lead makeup artist Grace Lee on doing bright right



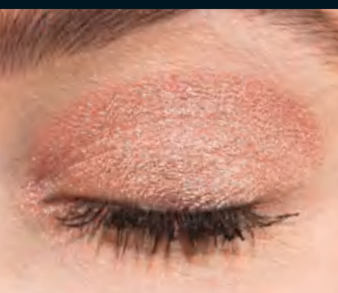
Mix and Match
Vibrant cheeks and lips are OK as long as you stay within the same color family. (Pro tip: Smudge lipstick on the apple of your cheeks and blend in for instant blush.) Vivid eyes and lips work, too, but make sure they're in contrasting colors, and pick a sheer lipstick.



Watch Your Tone
Fairer skin looks good in light corals and blues, which complement pink undertones. Reds, oranges, and greens pop against an olive complexion. Darker skin shines in rich burgundy and gold. But don't be afraid to experiment. "Most people can wear any color," Lee says.

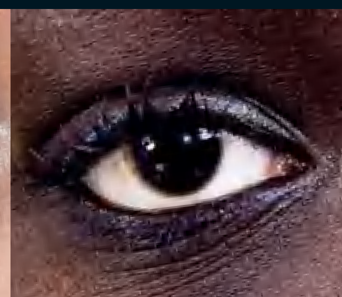
r Brights

. Our 24 eye-popping favorites. By Aja Mangum



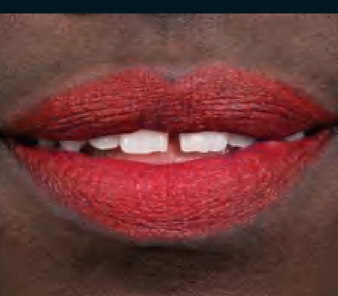
M.A.C.
Pigment Colour Powder
in Tan
$22; maccosmetics.com

Yves Saint Laurent
Beauté Couture Palette
in Indie Jaspe
$60; yslbeautyus.com

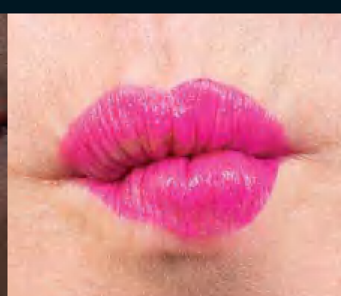


Chanel
Le Volume De Chanel mascara
in Ardent Purple
$32; chanel.com

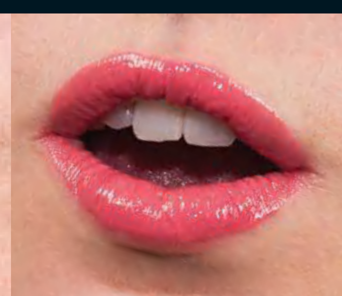
Tom Ford
High Definition eyeliner
in Azure
$42; tomford.com



Le Métier de Beauté
Moisture matte lipstick
in Amelie
$32; neimanmarcus.com

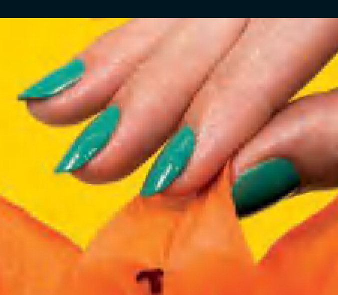


L'Oréal
Infallible Pro-Matte Gloss
in Fuchsia Amnesia
$9.99; lorealparisusa.com



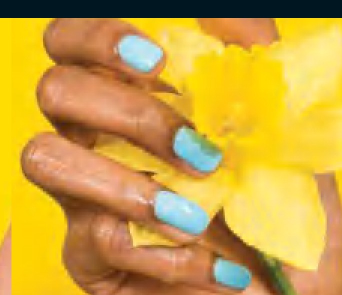
Essence
Liquid Lipstick
in Peach Party
$3.49; essence-cosmetics.com

Guerlain
Kisskiss lipstick
in All About Pink
$37; guerlain.com

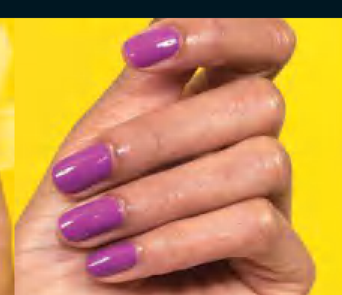


Deborah Lippmann
She Drives Me Crazy
$18; deborahlippmann.com

Essie
Make Some Noise
$8.50; essie.com



Smith & Cult
Cut the Mullet
$18; smithandcult.com



OPI
I Manicure for Beads
$10; macys.com

Perfect Pairs
Let the color wheel be your guide. Opposites are good–reds and greens, purples and yellows, blues and oranges, even blues and golds–but any two closer colors are going to look too matchy-matchy.

Enough Is Enough
Don't cake on the foundation: Bold, colorful eyes and bright lips look more polished against natural skin. And neutral clothing makes brilliant colors more wearable.

Power Pout
"A really red lip is a great corporate look these days," Lee says.

PHOTOGRAPHS BY SERGIY BARCHUK FOR BLOOMBERG BUSINESSWEEK (24); MAKEUP: REBECCA GARCIA; NAIL ARTIST: SIMCHA WHITHILL; ILLUSTRATIONS BY 731

MANDATORY FUN

Companies are outsourcing employee morale building
By Jennifer Miller

On a recent Thursday evening, Erin McCulloch, 31, was in her New York City office's conference room balancing on her manager's shins. Nearby, another colleague lay on her back and lifted the chief executive officer into the air with her feet, airplane-style. Jason Nemer, who'd come to teach this fusion of acrobatics and yoga to employees of tea and supplement company Aloha, was pleased. "We can leverage the wisdom of AcroYoga and apply it to corporate America," he said. "Both require cooperation and communication."

This may overstate the powers of AcroYoga, but not by much. Ever since Google began offering employees free massages and fresh-fruit smoothies, startups have had to think hard about recruitment and retention tools, from on-site dry cleaners and baby-sitting to conference-room gymnastics. According to a 2015 survey by job-listings website Glassdoor, 79 percent of workers would prefer new benefits and perks over a raise. More money is nice, of course, but having a little extra in your paycheck may not enrich your life in the same way that making your day-to-day a bit more fun might.

Not every company is Google, so if you don't have a market cap in the hundreds of billions of dollars, you can outsource your morale building to Wekudo (pronounced "we could do"), which acts as a middleman, pairing businesses like Aloha with, say, AcroYoga instructors. A company can hire Wekudo to set up weekly or monthly events, a need its 24-year-old founder, Lee Rubin, identified in her previous job. Rubin's manager was tasked with planning employee social events. "They didn't have the time, and they didn't know what to do, so they were like, 'Screw it. We'll have a happy hour,'" Rubin recalls. And because human resources had budgeted $50 to $100 for each employee—thinking it would be spent on trust falls, not Tanqueray and tonics—"people ended up in situations that weren't professional." Eventually, Rubin says, the startup banned booze on the company dime, and after that, "there were no events at all."

What Rubin has learned is that, as nice as free smoothies are, "it's experiences that keep people engaged. If you want to retain employees, they need to feel like they're bettering themselves." And it doesn't hurt if the company benefits, too. Wekudo trains its third-party instructors to make connections between activities and corporate goals. An improv teacher might have a sales group act out client pitches. Or in a game of laser tag, Wekudo would make sure the teams encourage interdepartmental communication. It's not exactly $100 in free gin and tonics, and there's bound to be some eye-rolling, but the concept seems to be catching on. Since Wekudo began last year, 15,000 employees have participated in its events in New York City, and 85 percent of clients have signed up for multiple sessions. This year, Rubin plans to expand to a half-dozen more cities. Some companies have started using Wekudo to attract new business: One CEO hired it to organize a trivia night to help his staff bond with clients.

Back at Aloha, McCulloch admitted that some of the instructor's team-building analogies were a little forced. (Nemer repeatedly compared AcroYoga to the business world. During the warmup he said, "In a corporate structure, we often lose sight of ourselves, so we'll start the class by listening to our own bodies.") But in the end, balancing on your manager's shins or flying airplane-style is simply "a different way of connecting," McCulloch said. Her boss, Nicole Tilzer, said, "Often, managers and teams don't communicate enough." She laughed, adding, "And tomorrow, I'm going to start throwing Erin around." B

ILLUSTRATION BY CARI VANDER YACHT

CALEB GROH

24, musician and artist, Nashville

What do you do?
I'm a folk musician and felt artist. Half the time I'm playing shows, creating albums, and going on tour, and I make animal sculptures through a technique called needle felting.

Oh, wow, I've never heard of that.
It started because I wanted to create characters for this stop-motion film I was doing, but then I got into it. As far as I know, I'm the only needle felter by occupation.

How would you describe your style?
I'd say that it's pretty effortless. True style is about eliminating excess. It's about dressing mostly for yourself and not anyone else.

Are your pants gold?
No. I spent a good time looking for the perfect caramel-colored pants, and when I saw these, it was like I'd finally found exactly what I was looking for.

Did they come rolled up like that?
They didn't. I'll roll them up once or twice depending on how much sock I want to show off.

These are socks you would show off.
They were an impulse purchase, but I wear them all the time. I like that they're kind of serious, but if you look closely, there's palm trees all over.

Is that a leopard-print shirt?
Yeah! I got it from a vintage boutique called Local Honey. It's actually a woman's shirt.

Was it on a female mannequin?
No, it was on an androgynous one. I think it was headless.

PHOTOGRAPH BY AMY HARRITY FOR BLOOMBERG BUSINESSWEEK

Interview by Jason Chen

How Did I Get Here?

BRAD SMITH

Chief executive officer and chairman, Intuit

As a senior in high school, 1982

"I was a black belt in tae kwon do, played guitar and sax, and lifeguarded for nine summers. In my mind, I was Don Johnson from *Miami Vice*."

Education

Ceredo-Kenova High School, Kenova, W.Va., class of 1982

U.S. Military Academy at West Point, 1982-83

Marshall University, Huntington, W.Va., class of 1986

Aquinas College, Grand Rapids, Mich., master's in management and leadership development, class of 1991

"I loved everything except that my girlfriend was back home and I was marching at 4 a.m. I decided maybe I was a lover, not a fighter."

West Point, 1982

"Before the Internet, direct mail was how you got into big data. I handled our biggest product, a mailer that had all the junk mail jammed in."

"My first job was to manage six Teamster truck drivers."

Work Experience

1986–91
Senior account manager, Pepsi Bottling Group

1991–92
General manager, 7Up Co. Akron

1992–96
Vice president for field marketing, ADVO

1996–2003
Senior VP for marketing and business development, ADP

2003–08
SVP, consumer tax group; GM, small business division, Intuit

2008–Present
CEO, president, and chairman, Intuit

With former Marshall University football coach Jack Lengyel, 2015

"I was responsible for their first Internet payroll product and generated sales you could count on your fingers and toes."

"We now have 7,700 employees in 25 offices around the globe, with revenue north of $4.2 billion. And I'm excited about our business model transition to a cloud-based, global product."

"I learned that people don't wake up excited about accounting, so our job was to make the work go away and deliver delightful outcomes, like higher tax refunds."

Brands: TurboTax, ProSeries, Lacerte, QuickBooks, Quicken, and Mint

With Oprah, 2015

Life Lessons

1. "Taxes are simply the story of your life." **2.** "Do whatever makes your heart beat fastest." **3.** "Choose a workplace not for ego reasons like title and money, but because it fits your values and surrounds you with smart people."

Courtesy subject (5); Alamy (2)

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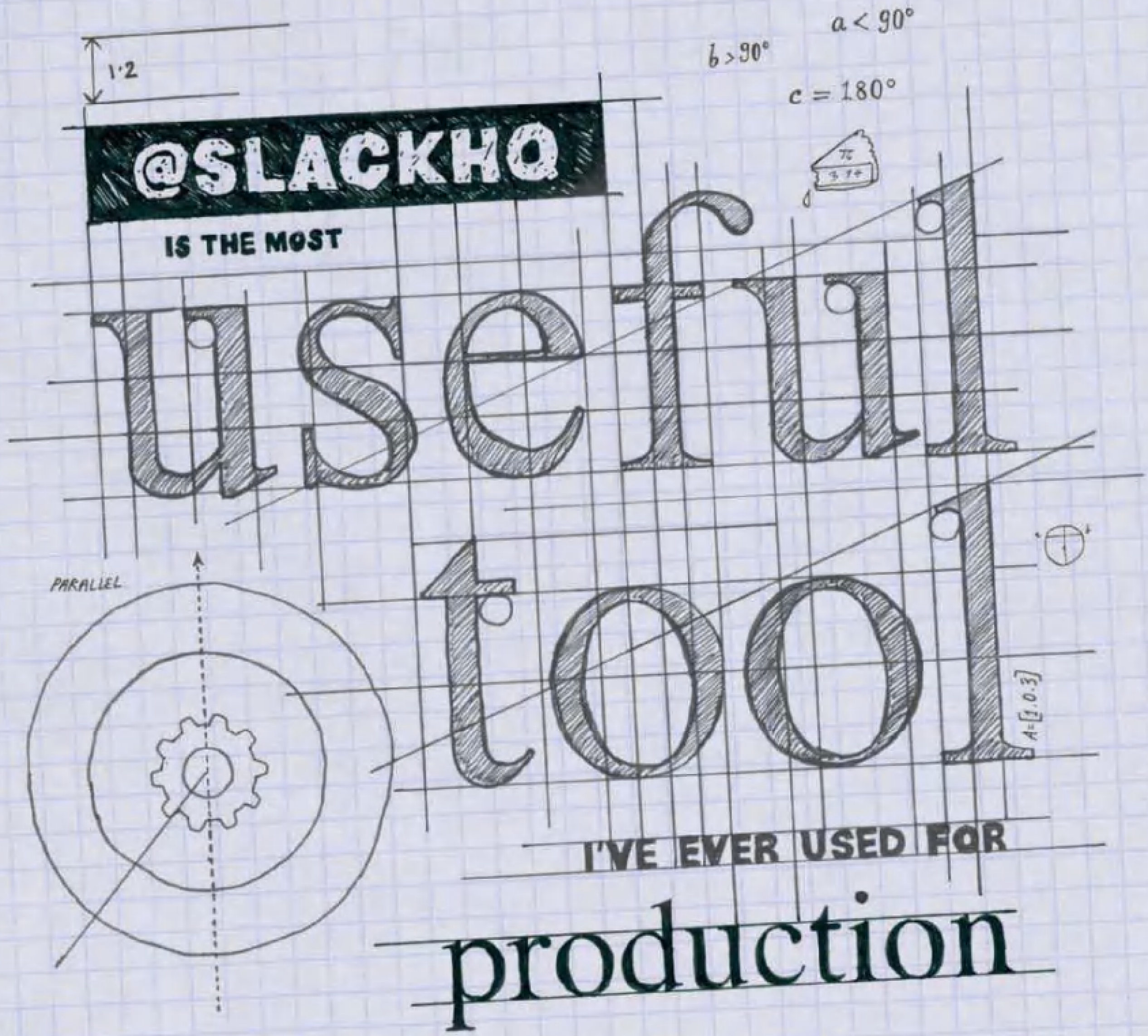
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